

=> d his

(FILE 'HOME' ENTERED AT 10:07:42 ON 03 NOV 2002)  
SET COST OFF

FILE 'HCAPLUS' ENTERED AT 10:08:04 ON 03 NOV 2002

L1 23 S BETA 1 3 1 6 GLUCAN  
L2 32 S BETA 1 3 BETA 1 6 GLUCAN  
L3 54 S L1,L2  
L4 436 S BETA (L) 1 3 (L) 1 6 (L) GLUCAN  
L5 436 S L3,L4  
E IKEWAKI N/AU  
L6 21 S E3-E5  
E FUJII N/AU  
L7 177 S E3,E33,E34,E48  
E ONAKA T/AU  
L8 172 S E3,E8,E10  
E NOBUNAO I/AU  
E NOBORU F/AU  
E TAKASHI O/AU  
E ONAKA Y/PA,CS  
E ONAKA/PA,CS  
L9 7 S E3,E4  
E YASUSHI/PA,CS  
L10 99 S E3-E6  
L11 1 S L5 AND L6-L10

FILE 'REGISTRY' ENTERED AT 10:12:43 ON 03 NOV 2002

L12 1 S 9041-22-9

FILE 'HCAPLUS' ENTERED AT 10:13:47 ON 03 NOV 2002

L13 1582 S L12  
L14 4218 S BETA GLUCAN OR BETA D GLUCAN OR BETA GLUCOSYLGLUCAN OR EPIGLU  
L15 3 S L13,L14 AND L6-L10  
L16 3 S L11,L15  
L17 188 S L5 AND L13,L14  
L18 248 S L5 NOT L17

FILE 'REGISTRY' ENTERED AT 10:22:47 ON 03 NOV 2002

L19 1 S 53238-80-5  
L20 1 S 9051-97-2  
L21 1 S 37361-00-5  
L22 1 S 9012-72-0

FILE 'HCAPLUS' ENTERED AT 10:24:29 ON 03 NOV 2002

SET SMARTSELECT ON  
L23 SEL L5 1- RN : 1059 TERMS  
SET SMARTSELECT OFF

FILE 'REGISTRY' ENTERED AT 10:24:38 ON 03 NOV 2002

L24 1056 S L23  
L25 1051 S L24 NOT L12,L19-L22  
L26 278 S L25 AND UNSPECIFIED  
L27 217 S L26 NOT SQL/FA  
L28 199 S L27 AND 1/NC  
L29 49 S L28 AND GLUCAN  
L30 18 S L29 AND FWDARW  
L31 15 S L30 AND (3 OR 6)  
L32 11 S L31 NOT ENDO  
L33 8 S L32 NOT 4  
L34 5 S L33 NOT (LAMINARAN OR EXO OR URIDINE)  
L35 3 S L34 AND (3 AND 6)  
L36 2 S L34 NOT L35

Jan Delaval  
Reference Librarian  
Biotechnology & Chemical Library  
CM1 1E07-703-308-4498  
jan.delaval@uspto.gov

L37 1 S L36 AND 3  
L38 1 S L36 NOT L37  
L39 31 S L29 NOT L30-L38  
L40 3 S L39 AND ALPHA D GLUCAN  
L41 1 S L40 NOT AMYLASE

FILE 'HCAPLUS' ENTERED AT 10:30:55 ON 03 NOV 2002

L42 197 S L35 OR L19  
L43 93 S L20,L37 AND L21,L38  
L44 628 S L42,L43,L5,L17  
L45 2085 S L22,L41  
L46 1 S FERM () (P18099 OR P() (18099 OR 18 099))  
E AUREOBASID/CT  
E E4+ALL  
L47 1123 S E4+NT  
L48 1541 S E4-E14/BI  
E AUREOBASID  
L49 1333 S E8-E10  
L50 5 S E18,E20,E21  
L51 1 S L5,L13-L18,L42-L45 AND L46  
L52 53 S L5,L13-L18,L42-L45 AND L47-L50  
L53 3 S L16 AND L51,L52  
L54 50 S L52 NOT L51,L53  
L55 22 S L54 AND (1 3 OR 1 6)  
L56 16 S L54 AND 1 3 AND 1 6  
L57 19 S L51,L53,L56  
L58 34 S L52,L54,L55 NOT L57  
L59 14 S L58 AND 1(1W)3  
L60 11 S L58 AND 1(1W)6  
L61 6 S L59 AND L60  
L62 25 S L57,L61  
L63 28 S L58 NOT L62  
L64 27 S L63 NOT 3/SC,SX  
SEL DN AN 3 10 11 14 15 19 22 23 24  
L65 9 S E1-E27  
L66 34 S L62,L65 AND L1-L11,L13-L18,L42-L65  
L67 33 S L66 AND ?GLUCAN?  
L68 34 S L66,L67  
SEL HIT RN

FILE 'REGISTRY' ENTERED AT 10:45:05 ON 03 NOV 2002

L69 7 S E28-E34

=> fil reg

FILE 'REGISTRY' ENTERED AT 10:45:42 ON 03 NOV 2002

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STRUCTURE FILE UPDATES: 1 NOV 2002 HIGHEST RN 469352-44-1

DICTIONARY FILE UPDATES: 1 NOV 2002 HIGHEST RN 469352-44-1

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d ide can tot 169

L69 ANSWER 1 OF 7 REGISTRY COPYRIGHT 2002 ACS  
RN 215923-32-3 REGISTRY  
CN .beta.-D-Glucan, (1.fwdarw.3), (1.fwdarw.6)-, sodium salt (9CI) (CA INDEX NAME)  
MF Unspecified  
CI PMS, MAN  
PCT Manual registration  
SR CA  
LC STN Files: CA, CAPLUS

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
1 REFERENCES IN FILE CA (1962 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 130:13419

L69 ANSWER 2 OF 7 REGISTRY COPYRIGHT 2002 ACS  
RN 53238-80-5 REGISTRY  
CN .beta.-D-Glucan, (1.fwdarw.3), (1.fwdarw.6)- (9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN .beta.-1,3,.beta.-1,6-Glucan  
CN Antivir  
CN Glucan P  
CN Glucanil  
CN Gluimmun  
CN HA-.beta.-Glucan  
CN Macrogard  
CN OL 2  
CN OL 2 (polysaccharide)  
CN R-Glucan  
CN T 4N  
CN T 5N  
MF Unspecified  
CI PMS, COM, MAN  
PCT Manual registration  
LC STN Files: BIOBUSINESS, BIOSIS, CA, CANCERLIT, CAPLUS, CHEMLIST, IPA, MEDLINE, TOXCENTER, USPAT2, USPATFULL  
Other Sources: EINECS\*\*  
(\*\*Enter CHEMLIST File for up-to-date regulatory information)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
176 REFERENCES IN FILE CA (1962 TO DATE)  
15 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
176 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 137:78300

REFERENCE 2: 136:284380

REFERENCE 3: 136:18053

REFERENCE 4: 135:376541

REFERENCE 5: 135:236076

REFERENCE 6: 135:205531

REFERENCE 7: 135:91890

REFERENCE 8: 135:43205

REFERENCE 9: 134:17646

REFERENCE 10: 133:2603

L69 ANSWER 3 OF 7 REGISTRY COPYRIGHT 2002 ACS

RN 37361-00-5 REGISTRY

CN .beta.-D-Glucan, (1.fwdarw.6)- (9CI) (CA INDEX NAME)

OTHER NAMES:

CN (1-6)-.beta.,D-Glucan

CN (1.fwdarw.6)-.beta.-Glucan

CN .beta.-(1-6)-Glucan

CN .beta.-(1.fwdarw.6)-D-Glucan

CN .beta.-D-1,6-Glucan

MF Unspecified

CI PMS, COM, MAN

PCT Manual registration

LC STN Files: AGRICOLA, ANABSTR, BIOSIS, CA, CANCERLIT, CAPLUS, MEDLINE,  
TOXCENTER, USPATFULL

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

150 REFERENCES IN FILE CA (1962 TO DATE)

8 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

151 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 137:246253

REFERENCE 2: 137:182127

REFERENCE 3: 137:182084

REFERENCE 4: 137:179846

REFERENCE 5: 137:119657

REFERENCE 6: 136:391013

REFERENCE 7: 136:291598

REFERENCE 8: 136:228977

REFERENCE 9: 136:179185

REFERENCE 10: 136:161954

L69 ANSWER 4 OF 7 REGISTRY COPYRIGHT 2002 ACS

RN 9074-78-6 REGISTRY

CN .alpha.-D-Glucan (9CI) (CA INDEX NAME)

OTHER NAMES:

CN .alpha.-Glucan

CN BioEcolia

CN BioEcolians

MF Unspecified

CI PMS, MAN

PCT Manual registration

LC STN Files: AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, CA, CABA, CAPLUS,  
NAPRALERT, PROMT, TOXCENTER, USPATFULL

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

219 REFERENCES IN FILE CA (1962 TO DATE)  
11 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
219 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 137:197288

REFERENCE 2: 137:136779

REFERENCE 3: 137:136778

REFERENCE 4: 137:44292

REFERENCE 5: 137:17096

REFERENCE 6: 136:400979

REFERENCE 7: 136:338402

REFERENCE 8: 136:299789

REFERENCE 9: 136:258985

REFERENCE 10: 136:199036

L69 ANSWER 5 OF 7 REGISTRY COPYRIGHT 2002 ACS

RN 9051-97-2 REGISTRY

CN .beta.-D-Glucan, (1.fwdarw.3)- (9CI) (CA INDEX NAME)

OTHER NAMES:

CN (1,3)-.beta.-Glucan

CN (1.fwdarw.3)-.beta.-D-Glucan

CN Adjuvax

CN Drieline

CN GL 32

CN Glucan F

CN Guardoran

CN Highcareen GS

CN ImmuStim

CN Poly(1.fwdarw.3)-.beta.-D-glucan

CN Polysaccharide 13140

CN SSG

CN TAK

CN TAK (polysaccharide)

CN TAK-N

CN Uniglucan 51

CN VitaStim

DR 9050-90-2, 9052-00-0, 130809-04-0, 31667-87-5, 199665-06-0

MF Unspecified

CI PMS, COM, MAN

PCT Manual registration

LC STN Files: ADISINSIGHT, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS,  
BIOTECHNO, CA, CANCERLIT, CAPLUS, CIN, DDFU, DRUGNL, DRUGU, DRUGUPDATES,  
EMBASE, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, NIOSHTIC, PHAR, PROMT,  
RTECS\*, TOXCENTER, USPAT2, USPATFULL  
(\*File contains numerically searchable property data)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

1117 REFERENCES IN FILE CA (1962 TO DATE)

126 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

1120 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 137:277732

REFERENCE 2: 137:263438

REFERENCE 3: 137:263431

REFERENCE 4: 137:262202

REFERENCE 5: 137:258267

REFERENCE 6: 137:252965

REFERENCE 7: 137:248109

REFERENCE 8: 137:246253

REFERENCE 9: 137:244671

REFERENCE 10: 137:228482

L69 ANSWER 6 OF 7 REGISTRY COPYRIGHT 2002 ACS

RN 9041-22-9 REGISTRY

CN .beta.-D-Glucan (9CI) (CA INDEX NAME)

OTHER NAMES:

CN .beta.-Glucan

CN .beta.-Glucosylglucan

CN Biopoly P 3

CN Epiglucan

CN Fibosel

MF Unspecified

CI PMS, COM, MAN

PCT Manual registration

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, CA, CABA,  
CAPLUS, CBNB, CEN, CHEMCATS, CIN, CSCHEM, IFICDB, IFIPAT, IFIUDB, IPA,  
NIOSHTIC, PIRA, PROMT, TOXCENTER, USPAT2, USPATFULL

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

1578 REFERENCES IN FILE CA (1962 TO DATE)

59 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

1583 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 137:278425

REFERENCE 2: 137:277742

REFERENCE 3: 137:261919

REFERENCE 4: 137:246785

REFERENCE 5: 137:244763

REFERENCE 6: 137:231799

REFERENCE 7: 137:231697

REFERENCE 8: 137:216181

REFERENCE 9: 137:216164

REFERENCE 10: 137:216134

L69 ANSWER 7 OF 7 REGISTRY COPYRIGHT 2002 ACS

RN 9012-72-0 REGISTRY

CN D-Glucan (9CI) (CA INDEX NAME)

OTHER NAMES:

CN D-Glucosan

CN Glucan  
CN Glucosan  
CN Poly-D-glucan  
CN Polyglucan  
CN Polyglucosan  
DR 9037-91-6, 9072-21-3  
MF Unspecified  
CI PMS, COM, MAN  
PCT Manual registration  
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO,  
CA, CANCERLIT, CAPLUS, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DRUGU,  
EMBASE, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, NAPRALERT, NIOSHTIC, PIRA,  
PROMT, RTECS\*, TOXCENTER, USPAT2, USPATFULL  
(\*File contains numerically searchable property data)  
Other Sources: EINECS\*\*, NDSL\*\*  
(\*\*Enter CHEMLIST File for up-to-date regulatory information)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

1854 REFERENCES IN FILE CA (1962 TO DATE)  
138 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
1854 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 137:262252  
REFERENCE 2: 137:261958  
REFERENCE 3: 137:231486  
REFERENCE 4: 137:231480  
REFERENCE 5: 137:221988  
REFERENCE 6: 137:215874  
REFERENCE 7: 137:215866  
REFERENCE 8: 137:202855  
REFERENCE 9: 137:184455  
REFERENCE 10: 137:182068

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FILE 'HCAPLUS' ENTERED AT 10:45:49 ON 03 NOV 2002  
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FILE COVERS 1907 - 3 Nov 2002 VOL 137 ISS 19  
FILE LAST UPDATED: 1 Nov 2002 (20021101/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> d all tot 168

L68 ANSWER 1 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
 AN 2002:488270 HCAPLUS  
 DN 137:52341  
 TI Use of **beta glucan** from **Aureobasidium** medium  
 as active agent in pharmaceutical, cosmetic, and food preparations  
 IN Ikewaki, Nobunao; Fujii, Noboru; Onaka,  
 Takashi  
 PA Yasushi Onaka, Japan  
 SO U.S. Pat. Appl. Publ., 18 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 IC ICM C08B037-00  
 ICS A61K031-715; A61K007-00; C12P019-04  
 NCL 536123120  
 CC 63-4 (Pharmaceuticals)  
 Section cross-reference(s): 1, 62  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002082418	A1	20020627	US 2001-986535	20011109
	JP 2002204687	A2	20020723	JP 2001-332459	20011030
PRAI	JP 2000-342310	A	20001109		

AB **Aureobasidium .beta.-1.3-1**  
 .6 glucans and compns. contg. such glucans,  
 as well as methods of their prepn. are disclosed. **Aureobasidium**  
 medium that contains .beta.-1.3-1.  
 6 glucans, particularly medium produced by  
**Aureobasidium** strain FERM P-18099  
 are studied. The .beta.-glucans of the present  
 invention have a variety of industrial and com. uses, including  
 applications in pharmaceutical or medical products or treatments, for the  
 removal or control of environmental or microbiol. contaminants, in  
 cosmetics, and in nutritional products and foods. .beta.-  
 1.3-1.6 Glucan (I) was  
 added to various leukemia cells, which were cultured for 1 to 3 days at  
 37.degree.. Addn. of I directly inhibited the proliferation of cancer  
 (leukemia) cells. The data suggested the direct killing of cancer cells,  
 for instance, by induction of programmed death (apoptosis), as other  
 components of the immune system were absent.

ST **Aureobasidium** medium **beta glucan**  
 pharmaceutical cosmetic food

IT Mental disorder  
 (dementia; use of **beta glucan** from  
**Aureobasidium** medium as active agent in pharmaceutical,  
 cosmetic, and food preps.)

IT Connective tissue  
 (disease; use of **beta glucan** from  
**Aureobasidium** medium as active agent in pharmaceutical,  
 cosmetic, and food preps.)

IT Vein  
 (hemorrhoid; use of **beta glucan** from  
**Aureobasidium** medium as active agent in pharmaceutical,

✓ this application



- cosmetic, and food prepsns.)
  - IT Neoplasm
    - (metastasis; use of **beta glucan** from **Aureobasidium** medium as active agent in pharmaceutical, cosmetic, and food prepsns.)
  - IT Nerve, disease
    - (neuropathy; use of **beta glucan** from **Aureobasidium** medium as active agent in pharmaceutical, cosmetic, and food prepsns.)
  - IT Diet
    - (supplements; use of **beta glucan** from **Aureobasidium** medium as active agent in pharmaceutical, cosmetic, and food prepsns.)
  - IT Anti-inflammatory agents
    - (topical; use of **beta glucan** from **Aureobasidium** medium as active agent in pharmaceutical, cosmetic, and food prepsns.)
  - IT Alzheimer's disease
  - Antidiabetic agents
  - Antimicrobial agents
  - Antitumor agents
  - Arteriosclerosis
  - Aureobasidium**
  - Autoimmune disease
  - Cirrhosis
  - Cosmetics
  - Culture media
  - Diabetes mellitus
  - Food
  - Hospitals
  - Hypertension
  - Immunostimulants
  - Infection
  - Inflammation
  - Liver, disease
  - Medical goods
  - Neoplasm
  - Osteoporosis
  - Rheumatoid arthritis
  - Virus
    - (use of **beta glucan** from **Aureobasidium** medium as active agent in pharmaceutical, cosmetic, and food prepsns.)
  - IT Infection
    - (viral; use of **beta glucan** from **Aureobasidium** medium as active agent in pharmaceutical, cosmetic, and food prepsns.)
  - IT 9041-22-9, **.beta.-Glucan**
    - RL: NPO (Natural product occurrence); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
    - (use of **beta glucan** from **Aureobasidium** medium as active agent in pharmaceutical, cosmetic, and food prepsns.)
- L68 ANSWER 2 OF 34 HCAPLUS COPYRIGHT 2002 ACS
- AN 2002:383238 HCAPLUS
- DN 137:197288
- TI A new pullulan and a branched (1.fwdarw.3)-, (1.fwdarw.6)-linked **.beta.-glucan** from the lichenised ascomycete *Teloschistes flavicans*
- AU Reis, Rodrigo A.; Tischer, Cesar A.; Gorin, Philip A. J.; Iacomini, Marcello
- CS Departamento de Bioquimica, Universidade Federal do Parana, Curitiba, Parana, 81531-990, Brazil
- SO FEMS Microbiology Letters (2002), 210(1), 1-5

- CODEN: FMLED7; ISSN: 0378-1097
- PB Elsevier Science B.V.
- DT Journal
- LA English
- CC 6-4 (General Biochemistry)
- Section cross-reference(s): 10
- AB The polysaccharides formed on hot alk. extn. of the ascomycetous lichen *Teloschistes flavicans* were fractionated to give two **glucans**, which were characterized by methylation anal. and 1D and 2D NMR spectroscopy. One was a branched **.beta.-glucan** contg. (1.fwdarw.3) and (1.fwdarw.6) linkages, a structure which is more typical of basidiomycetes rather than ascomycetes, which have linear **glucans**. The other was an **.alpha.-glucan** with alternating (1.fwdarw.4) and (1.fwdarw.6) linkages, found for the first time in nature. This structure can be classified as a pullulan, which has been isolated from the fungi *Aureobasidium pullulans*, *Tremella mesenterica*, and *Cyttaria hariatii*, but has different ratios of the component glycosidic linkages. The significance of the presence of the isolated **.alpha.-** and **.beta.-glucans** is discussed.
- ST pullulan **glucan** lichen *Teloschistes*
- IT Lichen
- NMR (nuclear magnetic resonance)
- Teloschistes flavicans*
- (new pullulan and a branched (1.fwdarw.3)-, (1.fwdarw.6)-linked **.beta.-glucan** from lichenised ascomycete *Teloschistes flavicans*)
- IT Carbohydrates, biological studies
- RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
- (new pullulan and a branched (1.fwdarw.3)-, (1.fwdarw.6)-linked **.beta.-glucan** from lichenised ascomycete *Teloschistes flavicans*)
- IT 37417-41-7
- RL: BSU (Biological study, unclassified); NPO (Natural product occurrence); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
- (new pullulan and a branched (1.fwdarw.3)-, (1.fwdarw.6)-linked **.beta.-glucan** from lichenised ascomycete *Teloschistes flavicans*)
- IT 9041-22-9, **.beta.-Glucan** 9057-02-7, Pullulan
- 9074-78-6, **.alpha.-Glucan**
- RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
- (new pullulan and a branched (1.fwdarw.3)-, (1.fwdarw.6)-linked **.beta.-glucan** from lichenised ascomycete *Teloschistes flavicans*)
- RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
- RE
- (1) Ahmadjian, V; The Lichen Symbiosis 2nd edn 1993, P250
  - (2) Barreto-Bergter, E; Adv Carbohydr Chem Biochem 1983, V41, P67 HCAPLUS
  - (3) Bax, A; J Magn Res 1985, V65, P355 HCAPLUS
  - (4) Bax, A; J Magn Res 1986, V61, P565
  - (5) Bernier, M; Can J Microbiol 1958, V4, P195
  - (6) Ciucanu, I; Carbohydr Res 1984, V131, P209 HCAPLUS
  - (7) Delgobo, C; Carbohydr Res 1999, V320, P167 HCAPLUS
  - (8) Gorin, P; CRC Handbook of Lichenology 1988, V3, P9
  - (9) Gorin, P; Can J Chem 1965, V43, P950 HCAPLUS
  - (10) Gorin, P; Cienc Cult 1993, V45, P27 HCAPLUS
  - (11) Hay, G; Methods Carbohydr Chem 1965, V5, P357 HCAPLUS
  - (12) Iacomini, M; Carbohydr Res 1987, V168, P55 HCAPLUS
  - (13) Jennings, H; J Am Chem Soc 1973, V92, P606
  - (14) Jones, J; Methods Carbohydr Chem 1965, V5, P36 HCAPLUS
  - (15) Nagayama, K; J Magn Res 1980, V40, P321 HCAPLUS

- (16) Perlin, A; Tetrahedron Lett 1969, V34, P2919  
 (17) Prado, S; Carbohydr Polymers 1999, V40, P271 HCAPLUS  
 (18) Waksman, N; Carbohydr Res 1977, V59, P505 HCAPLUS  
 (19) Woranovicz-Barreira, S; Phytochemistry 1999, V52, P1069 HCAPLUS

L68 ANSWER 3 OF 34 HCAPLUS COPYRIGHT 2002 ACS

AN 2001:626908 HCAPLUS

DN 135:180084

TI **.beta.-Glucan** for manufacture of ferment milk products

IN Ohashi, Tomio; Fujii, Noboru; Onaka, Takashi

PA Sophy K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C12P007-56

ICS C12P007-56; C12R001-645; C12R001-225

CC 17-8 (Food and Feed Chemistry)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001231589	A2	20010828	JP 2000-41246	20000218
AB	Manuf. of ferment milk products with <i>Lactobacillus delbrueckii bulgaricus</i> in a defatted milk medium is promoted with the addn. of <b>.beta.-glucan</b> produced by <i>Aureobasidium pullulans</i> . The addn. of <b>.beta.-glucan</b> promotes the growth of the <i>L. delbrueckii bulgaricus</i> and shorten the lactic acid prodn. cycle.				
ST	fermn milk product <i>Lactobacillus beta glucan</i> <b>Aureobasidium</b>				
IT	Dairy products Milk (ferment; <b>.beta.-Glucan</b> for manuf. of ferment milk products)				
IT	Milk preparations (yogurt; <b>.beta.-Glucan</b> for manuf. of ferment milk products)				
IT	<b>Aureobasidium pullulans</b> Culture media <i>Lactobacillus delbrueckii bulgaricus</i> ( <b>.beta.-Glucan</b> for manuf. of ferment milk products)				

L68 ANSWER 4 OF 34 HCAPLUS COPYRIGHT 2002 ACS

AN 2001:622516 HCAPLUS

DN 135:180083

TI Production of acid curd from milk with **.beta.-glucan**

IN Ohashi, Tomio; Fujii, Noboru; Onaka, Takashi

PA Sophy K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM A23C009-13

ICS A23C019-032; C12P019-04

CC 17-8 (Food and Feed Chemistry)

Section cross-reference(s): 10

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001231447	A2	20010828	JP 2000-41247	20000218
AB	<b>.beta.-Glucan</b> obtained by culturing polysaccharide-producing <i>Aureobasidium pullulans</i> is added to skim milk together with lactic acid bacteria to give milk curd. The process enhances formation of high-d. three-dimensional networks in				

the milk curd.

ST milk curd lactate bacteria **glucan Aureobasidium**

IT **Aureobasidium pullulans**  
Lactic acid bacteria  
Lactobacillus delbrueckii bulgaricus  
(manuf. of milk curd with lactic acid bacteria and **.beta.-glucan from Aureobasidium pullulans**)

IT Curd  
(milk; manuf. of milk curd with lactic acid bacteria and **.beta.-glucan from Aureobasidium pullulans**)

IT Milk  
(skim; manuf. of milk curd with lactic acid bacteria and **.beta.-glucan from Aureobasidium pullulans**)

IT 9041-22-9P, **.beta.-Glucan**  
RL: BPN (Biosynthetic preparation); FFD (Food or feed use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(manuf. of milk curd with lactic acid bacteria and **.beta.-glucan from Aureobasidium pullulans**)

L68 ANSWER 5 OF 34 HCAPLUS COPYRIGHT 2002 ACS

AN 2001:552653 HCAPLUS

DN 135:121518

TI Sterilization of foods using **Aureobasidium** culture solutions and acids

IN Fujii, Noboru; Suzuki, Shigetaka

PA Sophy K. K., Japan; Health Support Japan K. K.; Cats.com K. K.

SO Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM A23L003-3463

CC 17-4 (Food and Feed Chemistry)  
Section cross-reference(s): 5

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001204445	A2	20010731	JP 2000-16907	20000126
AB	Foods (e.g., vegetables, fruits, fishes) are sterilized by soaking into aq. solns. contg. 10-30 wt.% <b>Aureobasidium</b> culture solns. and .gtoreq.0.8% acetic acid and/or lactic acid for >10 min. Spinach was soaked in an aq. soln. contg. 20% <b>Aureobasidium</b> culture soln. and 0.8% AcOH for 15 min to show complete control of bacteria.				
ST	food sterilization <b>Aureobasidium</b> culture soln acid; spinach sterilization <b>Aureobasidium</b> culture soln acetate; lactate food sterilization <b>Aureobasidium</b> culture soln				
IT	Antibacterial agents <b>Aureobasidium</b> Spinach (Spinacia oleracea) Sterilization and Disinfection (sterilization of foods using <b>Aureobasidium</b> culture solns. and acids)				
IT	9051-97-2 37361-00-5 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses) (culture solns. contg.; sterilization of foods using <b>Aureobasidium</b> culture solns. and acids)				
IT	50-21-5, Lactic acid, biological studies 64-19-7, Acetic acid, biological studies RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses) (sterilization of foods using <b>Aureobasidium</b> culture solns.				

and acids)

L68 ANSWER 6 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1998:675185 HCAPLUS  
 DN 130:13419  
 TI Manufacture of foods and beverages containing .beta.-1  
 ,3-1,6-glucans from  
 Aureobasidium species  
 IN Hattori, Hiroshi  
 PA Japan  
 SO Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM A23L002-52  
 ICS A23L001-03; A23L001-30; C12P019-04  
 CC 17-6 (Food and Feed Chemistry)  
 Section cross-reference(s): 16

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10276739	A2	19981020	JP 1997-126169	19970409
AB	Aureobasidium sp. culture solns. contg. .beta.-1,3-1,6-glucan of its mixts. with fructooligosaccharides as main components are sterilized, optionally mixed with aq. alkali hydroxides, and spray-dried to manuf. powders useful as additives for foods and beverages.				
ST	glucan Aureobasidium food beverage additive				
IT	Aureobasidium Food additives Health food (foods and beverages contg. .beta.-1,3-1,6-glucans from Aureobasidium sp.)				
IT	53238-80-5P, .beta.-1,3-.beta.-1,6-Glucan RL: BPN (Biosynthetic preparation); FFD (Food or feed use); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); USES (Uses) (foods and beverages contg. .beta.-1,3-1,6-glucans from Aureobasidium sp.)				
IT	215923-32-3P RL: BPN (Biosynthetic preparation); FFD (Food or feed use); PUR (Purification or recovery); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses) (foods and beverages contg. .beta.-1,3-1,6-glucans from Aureobasidium sp.)				
IT	64-17-5, Ethanol, uses RL: NUU (Other use, unclassified); USES (Uses) (in prepn. of .beta.-1,3-1,6-glucan powders using Aureobasidium sp. for foods and beverages)				

L68 ANSWER 7 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1997:801801 HCAPLUS  
 DN 128:117178  
 TI Storage stabilization agents for crude oils  
 IN Watanabe, Kimiko; Mitsushashi, Shuichi; Suita, Yoshinori; Honjo, Isao  
 PA Nippon Oil Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese  
 IC ICM C10L001-18  
 CC 51-4 (Fossil Fuels, Derivatives, and Related Products)  
 Section cross-reference(s): 33

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09324184	A2	19971216	JP 1996-143879	19960606
AB	Storage stabilizers for crude oils with reduced sludge deposition and wax components, high water-sepn. properties, and inhibition of corrosion of storage tank metal are polysaccharides having no.-av. mol. wt. of 1000-5.times.107.				
ST	storage stabilization agent crude oil; polysaccharide crude oil storage stabilizer				
IT	<b>Aureobasidium pullulans</b> (storage stabilization agents for crude oils)				
IT	Polysaccharides, uses RL: MOA (Modifier or additive use); USES (Uses) (storage stabilization agents for crude oils)				
IT	Petroleum, uses RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (storage stabilization agents for crude oils)				
IT	9004-34-6, Cellulose, uses 9004-54-0, Dextran, uses 9057-02-7, Pullulan 9063-63-2 37339-90-5, Lentinan 53238-80-5, . .beta..-1,3,..beta..-1, 6-Glucan RL: MOA (Modifier or additive use); USES (Uses) (storage stabilization agents for crude oils)				

L68 ANSWER 8 OF 34 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:731802 HCAPLUS

DN 128:37131

TI Fuel oil compositions

IN Watanabe, Kimiko; Mihashi, Shuichi; Mizuta, Yoshinori; Suzuki, Hiroshi;  
Yamashita, Tadakazu

PA Nippon Oil Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C10L001-18

CC 51-12 (Fossil Fuels, Derivatives, and Related Products)

Section cross-reference(s): 33

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09291294	A2	19971111	JP 1996-106575	19960426
AB	Fuel oil compns. with reduced corrosion and decreased dust (unburnt hydrocarbon) generation upon combustion contain 0.001-5 wt.%, on total compn. basis, of polysaccharides having no.-av. mol. wt. 1000-50 .times.106.				
ST	fuel oil compn polysaccharide additive				
IT	Polysaccharides, uses RL: MOA (Modifier or additive use); USES (Uses) (fuel oil compns. contg.)				
IT	<b>Aureobasidium pullulans</b> (polysaccharides from; fuel oil compns. contg.)				
IT	Fuel oil additives (polysaccharides, anticorrosion; fuel oil compns. contg.)				
IT	9000-01-5, Arabic gum 9004-34-6, Cellulose, uses 9004-54-0, Dextran, uses 9051-97-2, 1,3-..beta..-				

**Glucan** 9057-02-7, Pullulan 9063-63-2 11138-66-2, Xanthan gum  
37339-90-5, Lentinan 53238-80-5, ..**beta**..-1,  
3,..**beta**..-1,6-**Glucan**  
162874-49-9, Kadoran  
RL: MOA (Modifier or additive use); USES (Uses)  
(fuel oil compns. contg.)

- L68 ANSWER 9 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
AN 1997:642550 HCAPLUS  
DN 127:290339  
TI A new variety of **Aureobasidium pullulans** characterized  
by exopolysaccharide structure, nutritional physiology and molecular  
features  
AU Yurlova, N. A.; De Hoog, G. S.  
CS Department of Microbiology, Chemical-Pharmaceutical Institute, St.  
Petersburg, 197376, Russia  
SO Antonie van Leeuwenhoek (1997), 72(2), 141-147  
CODEN: ALJMAO; ISSN: 0003-6072  
PB Kluwer  
DT Journal  
LA English  
CC 10-1 (Microbial, Algal, and Fungal Biochemistry)  
AB The black yeast **Aureobasidium pullulans** (de Bary)  
Arnaud is known to synthesize the exopolysaccharide pullulan, a  
poly-.alpha.-1,6-maltotriose. Nine strains were found  
to produce addnl. aubasidan-like EPS, i.e. **glucans** with  
.alpha.-1,4-D-, .beta.-1,6-D- and .  
**beta**.-1,3-D-glycosidic bonds. These strains  
had previously been found to deviate in genotypic characters. Addnl.  
physiol. differences were found: the optimal nitrogen source for  
exopolysaccharide prodn. in liq. medium was NaNO3 for aubasidan-producing  
strains, and (NH4)2SO4 for the remaining strains. A new variety, A.  
pullulans var. aubasidani Yurlova, is described for the strains producing  
aubasidan-like components. The new variety can be distinguished from A.  
pullulans var. pullulans by the absence of assimilation of  
methyl-.alpha.-D-glucoside and lactose.  
ST **Aureobasidium** exopolysaccharide pullulan aubazidan  
IT **Aureobasidium pullulans**  
**Aureobasidium pullulans aubasidani**  
(new variety of **Aureobasidium pullulans**  
characterized by exopolysaccharide structure, nutritional physiol. and  
mol. features)  
IT 9057-02-7, Pullulan 64427-24-3, Aubazidan  
RL: PRP (Properties)  
(new variety of **Aureobasidium pullulans**  
characterized by exopolysaccharide structure, nutritional physiol. and  
mol. features)
- L68 ANSWER 10 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
AN 1997:414458 HCAPLUS  
DN 127:146899  
TI Heterogeneity of **Aureobasidium pullulans** (de Bary)  
Arnaud 1910 with respect to the chemical composition and structure of  
exopolysaccharides  
AU Yurlova, N. A.  
CS State Chemico-Pharmaceutical Academy, St. Petersburg, Russia  
SO Microbiology (Moscow) (Translation of Mikrobiologiya) (1997), 66(3),  
299-304  
CODEN: MIBLAO; ISSN: 0026-2617  
PB MAIK Nauka/Interperiodica  
DT Journal  
LA English  
CC 10-1 (Microbial, Algal, and Fungal Biochemistry)

- AB The chem. compn. and structure of exopolysaccharides synthesized by nine **Aureobasidium pullulans** strains belonging to different genotypic groups were studied. It was found that A. pullulans synthesizes exopolysaccharides (EPSs) of the pullulan-aubasidan or aubasidan-pullulan types. A. pullulans strains for which (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> is the optimal nitrogen source for EPS biosynthesis produced EPSs that mainly contained the pullulan fraction (**glucan** with .alpha.-1,4-D- and .alpha.-1,6-D-glycoside bonds). In the strains synthesizing max. amts. of EPSs in the presence of NaNO<sub>3</sub>, the aubasidan fraction (**glucan** with .alpha.-1,4-D-, .beta.-1,6-D-, and .beta.-1,3-D-glucoside bonds) prevailed.
- ST **Aureobasidium** heterogeneity exo polysaccharide compn structure; pullulan **Aureobasidium**; aubasidan **Aureobasidium**
- IT Carbohydrates, biological studies  
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)  
(compn.; heterogeneity of **Aureobasidium pullulans** genotypes with respect to the chem. compn. and structure of exopolysaccharides)
- IT **Aureobasidium pullulans**  
(heterogeneity of **Aureobasidium pullulans** genotypes with respect to the chem. compn. and structure of exopolysaccharides)
- IT 9057-02-7, Pullulan 64427-24-3, Aubazidan  
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)  
(heterogeneity of **Aureobasidium pullulans** genotypes with respect to the chem. compn. and structure of exopolysaccharides)
- L68 ANSWER 11 OF 34 HCAPLUS COPYRIGHT 2002 ACS
- AN 1996:506277 HCAPLUS
- DN 125:140665
- TI Highly branched .beta.-glucan manufacture with **Aureobasidium** for treatment of animal diarrhea
- IN Watanabe, Kimiko; Sakayanagi, Sadao; Takagi, Mikihiro; Kyota, Takashi
- PA Nippon Oil Co Ltd, Japan
- SO Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF
- DT Patent
- LA Japanese
- IC ICM A61K031-715  
ICS A23K001-16; C08B037-00
- ICA C12P019-04
- ICI C12P019-04, C12R001-645
- CC 16-2 (Fermentation and Bioindustrial Chemistry)  
Section cross-reference(s): 17
- FAN.CNT 1
- |    | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|----|-------------|------|----------|-----------------|----------|
| PI | JP 08157377 | A2   | 19960618 | JP 1994-329466  | 19941202 |
- AB Highly branched .beta.-glucan (I) contg. .beta.-1,3-linkage backbone and .beta.-1,6-branches is manufd. by culturing **Aureobasidium pullulans** IFO4466. I obtained from the culture supernatant is useful as feed additive for control of diarrhea in animal. Shake-culture of A. pullulans IFO4466 in a medium of xylose, vitamin C, salts, etc., and recovery of I from the supernatant by EtOH-pptn. and dialysis were shown. The physiol. and morphol. characteristics of A. pullulans IFO4466 and physicochem. characteristics of I were also given.
- ST **glucan** beta fermn **Aureobasidium** antidiarrheals
- IT Feed  
(additive; highly branched .beta.-glucan manuf. with **Aureobasidium** for treatment of animal diarrhea)



IT **Aureobasidium pullulans**  
 Fermentation  
 (highly branched **.beta.-glucan** manuf. with  
**Aureobasidium** for treatment of animal diarrhea)

IT Diarrhea  
 (inhibitor to; highly branched **.beta.-glucan** manuf.  
 with **Aureobasidium** for treatment of animal diarrhea)

IT 9041-22-9P, **.beta.-Glucan**  
 RL: AGR (Agricultural use); BPN (Biosynthetic preparation); BIOL  
 (Biological study); PREP (Preparation); USES (Uses)  
 (highly branched **.beta.-glucan** manuf. with  
**Aureobasidium** for treatment of animal diarrhea)

L68 ANSWER 12 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1995:522886 HCAPLUS  
 DN 122:263698  
 TI **.beta.-1,3-Glucan** manufacture with  
**Aureobasidium**  
 IN Yamagami, Tomohide; Sakai, Norihito; Fukushima, Nobuhiro  
 PA Nippon Synthetic Chem Ind, Japan  
 SO Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C12P019-04  
 ICS C08B037-00  
 ICI C12P019-04, C12R001-645  
 CC 16-5 (Fermentation and Bioindustrial Chemistry)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07051080	A2	19950228	JP 1993-222290	19930812

AB **.beta.-1,3-Glucan** (I) is manufd. by  
 aerobically culturing **Aureobasidium** in a medium contg. sugars  
 and N compds., pH 4.5-6.5. The method enhances the prodn. of I and  
 shortens the prodn. time.

ST **beta glucan** fermn **Aureobasidium**

IT **Aureobasidium**  
 Fermentation  
 (**.beta.-1,3-glucan** enhanced manuf. with  
**Aureobasidium**)

IT Carbohydrates  
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES  
 (Uses)  
 (**.beta.-1,3-glucan** enhanced manuf. with  
**Aureobasidium**)

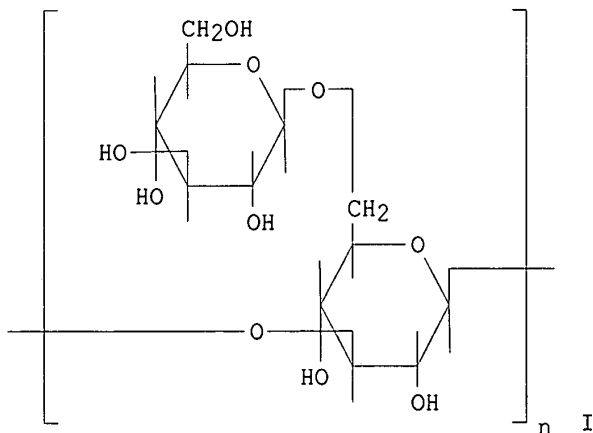
IT 7727-37-9, Nitrogen  
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES  
 (Uses)  
 (compds. of; **.beta.-1,3-glucan** enhanced  
 manuf. with **Aureobasidium**)

IT 9051-97-2P  
 RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL  
 (Biological study); PREP (Preparation)  
 (**.beta.-1,3-glucan** enhanced manuf. with  
**Aureobasidium**)

L68 ANSWER 13 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1995:422821 HCAPLUS  
 DN 122:190878  
 TI **Aureobasidium pullulans** derived highly branched **.beta.-glucans** and their manufacture and uses  
 IN Watanabe, Kimiko; Uchama, Yoko; Kyota, Takashi; Yagishita, Kazuhiro

PA Nippon Oil Co Ltd, Japan  
 SO Jpn. Kokai Tokkyo Koho, 12 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08B037-00  
 ICS A23L001-30; A23L001-308; A61K031-715; C12P019-04  
 ICI C12P019-04, C12R001-645  
 CC 44-5 (Industrial Carbohydrates)  
 Section cross-reference(s): 17, 63  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06340701	A2	19941213	JP 1993-154139	19930601
GI					



AB The title **glucans** have **.beta.-1,3**  
 -glucosyl linkages on main chain and **.beta.-1,**  
**6-glucosyl** linkages on side chains such as I, are isolated from  
 supernatant fraction of **Aureobasidium pullulans**  
 culture by org. solvent pptn. and characterized by having no.-av. mol. wt.  
 10,000-5,000,000, and are useful for food and feed additives and  
 anti-inflammatory agents.

ST **glucan** inflammatory inhibitor isolation; **Aureobasidium**  
**pullulans glucan** inflammatory inhibitor; food additive  
**Aureobasidium pullulans glucan**; feed additive  
**Aureobasidium pullulans glucan**

IT **Aureobasidium pullulans**  
 Feed  
 Food  
 Inflammation inhibitors  
 (**Aureobasidium pullulans** derived highly branched  
**.beta.-glucans** and manuf. and uses)

IT 9041-22-9, **.beta.-Glucan**  
 RL: BPR (Biological process); BSU (Biological study, unclassified); FFD  
 (Food or feed use); THU (Therapeutic use); BIOL (Biological study); PROC  
 (Process); USES (Uses)  
 (**Aureobasidium pullulans** derived highly branched  
**.beta.-glucans** and manuf. and uses)

AN 1995:311885 HCAPLUS  
 DN 122:122652  
 TI Antitumor activities and immunochemical properties of the cell-wall polysaccharides from **Aureobasidium pullulans**  
 AU Kataoka-Shirasugi, Naoko; Ikuta, Junko; Kuroshima, Akemi; Misaki, Akira  
 CS Dep. of Food and Nutrition, Osaka City Univ., Osaka, 558, Japan  
 SO Bioscience, Biotechnology, and Biochemistry (1994), 58(12), 2145-51  
 CODEN: BBBIEJ; ISSN: 0916-8451  
 PB Japan Society for Bioscience, Biotechnology, and Agrochemistry  
 DT Journal  
 LA English  
 CC 1-6 (Pharmacology)  
 AB Delipidated cell walls from **Aureobasidium pullulans** were fractionated systematically. The cell surface heteropolysaccharide contains D-mannose, D-galactose, D-glucose, and D-glucuronic acid (ratio, 8.5:3.9:1.0:1.0). It consists of a backbone of (1.fwdarw.6)-.alpha.-linked D-mannose residues, some of which are substituted at O-3 with single or .beta.-(1.fwdarw.6)-linked D-galactofuranosyl side chains, some terminated with a D-glucuronic acid residue, and also with single or .beta.-(1.fwdarw.6)-linked D-galactofuranosyl side chains, some terminated with a D-glucuronic acid residue, and also with single residues of D-glucopyranose, D-galactopyranose, and D-mannopyranose. This glucurono-gluco-galactomannan interacted with antiserum against *Elisinoe leucospila*, which also reacted with its galactomannan, indicating that both polysaccharides contain a common epitope, i.e., at least terminal .beta.-galactofuranosyl groups and also possibly internal .beta.-(1.fwdarw.6)-linked galactofuranose residues. It was further sepd. by DEAE-Sephacel column chromatog. to gluco-galactomannan and glucurono-gluco-galactomannan. The alkali-extd. .beta.-D-glucan was purified by DEAE-cellulose chromatog. to afford two antitumor-active (1.fwdarw.3)-.beta.-D-glucans. One of the glucans (Mr, 1-2.times.105) was a O-6-branched (1.fwdarw.3)-.beta.-D-glucan with a single .beta.-D-glucosyl residue, d.b., 1/7, and the other (Mr, 3.5-4.5.times.105) had similar branched structure, b.OMEGA..tau. having d.b., 1/5. Side chains of both glucans contain small proportions of .beta.-(1.fwdarw.6)- and .beta.-(1.fwdarw.4)-D-glucosidic linkages.  
 ST **Aureobasidium pullulans** wall polysaccharide compn antitumor  
 IT **Aureobasidium pullulans** Neoplasm inhibitors  
 (Aureobasidium pullulans cell-wall polysaccharides fractionation, chem. compn., and antitumor activity)  
 IT Polysaccharides, biological studies  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (Aureobasidium pullulans cell-wall polysaccharides fractionation, chem. compn., and antitumor activity)

L68 ANSWER 15 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1994:562205 HCAPLUS  
 DN 121:162205  
 TI Cleaning agents for metals  
 IN Hasegawa, Masayasu; Yamagami, Tomohide; Sakai, Norihito; Hamada, Nobutake  
 PA Nippon Synthetic Chem Ind, Japan; Osaka City  
 SO Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C23G001-06

ICS C08L005-00  
ICA C12P019-04  
ICI C12P019-04, C12R001-645  
CC 56-6 (Nonferrous Metals and Alloys)  
Section cross-reference(s): 16  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06146036	A2	19940527	JP 1992-218613	19920723

AB The agents contain polysaccharides having **.beta.-1, 3-glucan** backbone and prepd. through **aureobasidium**, in addn. to acids and/or chelating agents. The polysaccharide backbone has side chains consisting of **.beta.-1,6** bonded glucose, bonded to 3 of every 4 glucoses of the backbone, and having S-contg. group. The agents are noncorrosive and rustproofing.

ST polysaccharide soln metal cleaning rustproofing

IT **Aureobasidium**  
(polysaccharide produced by, cleaning solns. contg., noncorrosive and rustproofing, for metals)

IT Polysaccharides, uses  
RL: USES (Uses)  
(with **.beta.-1,3-glucan** backbone, prepd. through **aureobasidium**, rustproofing agents contg., for cleaning metals)

L68 ANSWER 16 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
AN 1994:319001 HCAPLUS  
DN 120:319001  
TI **Exoglucan** formed by **Aureobasidium pullulans**  
(d By.) Arnaud, 1910, F-371  
AU Yurlova, N. A.; Gun, Z. B.; Sinitskaya, I. A.; Kashkina, M. A.; Hmara, I. F.  
CS St. Petersburg. Khim.-Farm. Inst., St.-Petersburg, Russia  
SO Mikologiya i Fitopatologiya (1993), 27(6), 41-7  
CODEN: MIFIB2; ISSN: 0026-3648  
DT Journal  
LA Russian  
CC 10-1 (Microbial, Algal, and Fungal Biochemistry)  
Section cross-reference(s): 33  
AB An extracellular polysaccharide isolated from **A. pullulans** was identified as **glucan**. Chem. anal. revealed that the polysaccharide is composed of 14.6% **1,3-glucan**, 59% **1,4-glucan**, and 26.4% **1,6-glucan**. The polysaccharide displayed immunostimulatory activity when injected into mice (200 mg/kg, i.p.).

ST **Aureobasidium glucan** structure immunostimulator

IT Immunostimulants  
(from **Aureobasidium pullulans**, extracellular **glucan** as)

IT **Aureobasidium pullulans**  
(**glucan** from, extracellular, structure and immunostimulatory activity of)

IT **9012-72-0, Glucan**  
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)  
(from **Aureobasidium pullulans**, structure and immunostimulatory activity of)

L68 ANSWER 17 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
AN 1990:406708 HCAPLUS  
DN 113:6708  
TI Chemical and physical characterizations of polysaccharides produced by

- Aureobasidium** sp. K-1  
 AU Hamada, Nobutake; Yoshida, Shigeyoshi; Watanabe, Yasuto  
 CS Osaka Munic. Tech. Res. Inst., Osaka, 536, Japan  
 SO Kagaku to Kogyo (Osaka, Japan) (1990), 64(3), 131-5  
 CODEN: KKGOAG; ISSN: 0368-5918  
 DT Journal  
 LA Japanese  
 CC 33-5 (Carbohydrates)  
 Section cross-reference(s): 16  
 AB Chem. and phys. properties of the polysaccharide (None-PS) produced by **Aureobasidium** sp. K-1 in Czapek medium were compared with those of polysaccharide (ASA-PS) formed in ascorbic acid-contg. Czapek medium. Both None-PS and ASA-PS contained 2 types of polysaccharides, one (None-50 PS, and ASA-50 PS) pptd. from each culture broth with 50% EtOH, and the other (None-66 PS and ASA-66 PS) pptd. with 66% EtOH. None-66 PS was considered to be **.beta.-1,3-glucan** with **.beta.-1,6-glucose** branches contg. sulfoacetic acid similar to ASA-50 PS. But degree of branching and mol. wt. of None-66 PS were less than those of ASA-50 PS. The viscosity of aq. soln. of None-66 PS and None-50 PS was low and increased by heating at 120.degree. for 20 min., whereas that of ASA-66 PS and ASA-50 PS was high and did not change by heat treatment. NaCl affected the viscosity of each soln. of None-50 PS, None-60 PS, and ASA-66 PS, but not that of ASA-50 PS. The viscosity of each polysaccharide was stable to pH change from 3 to 10.  
 ST fermn **Aureobasidium** polysaccharide manuf  
 IT Polysaccharides, preparation  
 RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)  
 (manuf. of, by **Aureobasidium** K-1, chem. and phys. properties of)  
 IT Viscosity  
 (of polysaccharides from **Aureobasidium** K-1)  
 IT **Aureobasidium**  
 (polysaccharide manuf. from, chem. and phys. properties of)
- L68 ANSWER 18 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1990:156742 HCAPLUS  
 DN 112:156742  
 TI Manufacture of polysaccharide with **Aureobasidium** for enhanced growth of Bifidobacterium  
 IN Ibuki, Fumio; Iwami, Kimikazu; Shinohara, Satoshi  
 PA Daiichi Seito K. K., Japan  
 SO Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C12P019-04  
 ICS C08B037-00; C12N001-38  
 ICI C12P019-04, C12R001-01  
 CC 16-5 (Fermentation and Bioindustrial Chemistry)  
 Section cross-reference(s): 17  
 FAN.CNT 1
- |    | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|----|-------------|------|----------|-----------------|----------|
| PI | JP 01137990 | A2   | 19890530 | JP 1987-293220  | 19871120 |
- AB Polysaccharides, **.beta.-1,6, .beta.-1,6 glucan**, is manuf. by culturing **Aureobasidium** for use as feed or food to promote growth of Bifidobacterium. Thus, **Aureobasidium** FERM-P 452q was shake-cultured in medium contg. sucrose, trace elements (vitamins, inorg. chem.), etc.; and the polysaccharide was isolated from extracellular culture medium. Rats feeded with polysaccharide-contg. feed showed higher total anaerobic bacteria no. and higher Bifidobacterium ratio in total anaerobic bacteria

than those contg. cellulose and a known .beta.-1.  
3 polysaccharide.  
ST polysaccharide **Aureobasidium** Bifidus factor  
IT **Aureobasidium**  
(extracellular polysaccharide manuf. with, as bifidus factor)  
IT Bifidus factors  
RL: BIOL (Biological study)  
(extracellular polysaccharide of **Aureobasidium** as)  
IT Fermentation  
(extracellular polysaccharide, with **Aureobasidium**, as bifidus factor)  
IT Bifidobacterium  
(growth promoting of, extracellular polysaccharide manuf. with **Aureobasidium** for)

L68 ANSWER 19 OF 34 HCAPLUS COPYRIGHT 2002 ACS

AN 1988:73765 HCAPLUS

DN 108:73765

TI Aureobasillan, a novel .beta.-o-glucan from  
**Aureobasidium**, and its use in chemicals foods, and pharmaceuticals  
IN Misaki, Akira; Sone, Yoshiaki; Mitsunashi, Masakazu; Miyake, Toshio  
PA Hayashibara Biochemical Laboratories, Inc., Japan  
SO Eur. Pat. Appl., 43 pp.  
CODEN: EPXXDW

DT Patent

LA English

IC ICM C12P019-04

ICS C08B037-00

CC 16-2 (Fermentation and Bioindustrial Chemistry)

Section cross-reference(s): 1, 14, 17, 63

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 236124	A2	19870909	EP 1987-301847	19870303
	EP 236124	A3	19880420		
	EP 236124	B1	19940601		
	R: FR, GB, IT				
	JP 62201901	A2	19870905	JP 1986-44189	19860303
	JP 06092441	B4	19941116		
	CA 1335579	A1	19950516	CA 1987-530487	19870224
	US 4965347	A	19901023	US 1987-19186	19870225
PRAI	JP 1986-44189		19860303		

AB Aureobasillan, a .beta.-D-glucan with  
antitumor and anticholesteremic activity which can be derivatized and used  
in foods, is prepd. from the cell walls of **Aureobasidium**. a.  
pullulans IF04464 was cultured for 5 days at 27.degree. in 20 L culture  
medium. The culture was filtered and 1.4 kg pullulan prepd. from the  
filtrate. The cells (.apprx.200 g) were washed with hot water, defatted  
with acetone, and mixed with 4 L 0.5N NaOH for 4 h. The supernatant from  
centrifugation of this mixt. was dialyzed, concd., and dehydrated to prep.  
8 g crude Aureobasillan. DEAE-cellulose column chromatog. was used to  
prep. 400 mg Aureobasillan A (nonabsorbed fraction) and 500 mg  
Aureobasillan B (eluted with 0.1N NaOH). In mice, both Aureobasillans  
were effective antitumor agents (against sarcoma 180 tumors and Lewis lung  
cancer) and were extremely low in toxicity.

ST Aureobasillan A B manuf **Aureobasidium**; antitumor Aureobasillan A  
B

IT Nomenclature, new natural products  
(Aureobasillan A)

IT **Aureobasidium**  
(Aureobasillan A and B manuf. with, antitumor activity in relation to)

IT Coating materials  
(Aureobasillan A deriv. in)

IT Nomenclature, new natural products  
(Aureobasillan B)

IT Adhesives  
(Aureobasillan in)

IT **Aureobasidium pullulans**  
(Aureobasillans A and B and pullulan manuf. with)

IT Fermentation  
(Aureobasillans A and B, with Aureobasidium)

IT Food  
(Aureobasillans in)

IT Condiments  
(chinmi, Aureobasillan B in)

IT Fertilizers  
RL: BIOL (Biological study)  
(in Aureobasillan-contg. rod)

IT Pharmaceutical dosage forms  
(capsules, Aureobasillan A in)

IT Condiments  
(fish paste, Aureobasillan A in)

IT Frozen desserts  
(ice cream, Aureobasillan in)

IT Pharmaceutical dosage forms  
(injections, Aureobasillan A or B in)

IT Jams and Jellies  
(lemon, Aureobasillan B deriv. in)

IT Pharmaceutical dosage forms  
(ointments, Aureobasillan in)

IT Theragra chalcogramma  
(paste, Aureobasillan A in)

IT Pharmaceutical dosage forms  
(tablets, Aureobasillan A deriv. in)

IT Milk preparations  
(yogurt, Aureobasillan A in)

IT 112627-57-3 112627-57-3D, polyol deriv. 112627-58-4  
RL: BIOL (Biological study)  
(antitumor drug formulation contg.)

IT 9057-02-7P, Pullulan  
RL: PREP (Preparation)  
(manuf. of Aureobasillan A and B and, with **Aureobasidium**)

L68 ANSWER 20 OF 34 HCAPLUS COPYRIGHT 2002 ACS

AN 1987:642457 HCAPLUS

DN 107:242457

TI **.beta.-(1,3)(1,6)-**

**Glucan** as a cosmetic additive

IN Shinohara, Satoshi; Ueno, Hideo; Hirayama, Michiko; Tomiyasu, Keizaburo

PA Bio Bi Daimaru K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM A61K007-00

ICS A61K007-06; A61K009-06; A61K047-00; C11D003-38; C11D009-38

CC 62-4 (Essential Oils and Cosmetics)

Section cross-reference(s): 10

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62205008	A2	19870909	JP 1986-49273	19860305
AB	Cosmetics contain <b>.beta.-(1,3)(1,6)-glucan</b> as an additive to increase their biocompatibility. The <b>glucan</b> is isolated from a culture medium of microorganisms such as Aureobasidium. Skin lotion contained .				

**beta.-(1,3)(1,6)-glucan** 0.02, propylene glycol 3.0, EtOH 10.0, polyoxyethylene hydrogenated castor oil 0.4, a fragrance 0.6, and H2O 85.98% by wt.

ST **glucan** Aureobasidium cosmetic additive

IT **Aureobasidium**  
(**.beta.-glucan** from, cosmetics contg.)

IT Cosmetics  
(**.beta.-glucan**-contg.)

IT 53238-80-5  
RL: BIOL (Biological study)  
(cosmetics contg.)

L68 ANSWER 21 OF 34 HCAPLUS COPYRIGHT 2002 ACS

AN 1987:171716 HCAPLUS

DN 106:171716

TI Synthesis of **.beta.-glucan** by cell-free extracts of **Aureobasidium pullulans**

AU Finkelman, Malcolm A. J.; Vardanis, Alex

CS Genex Corp., Gaithersburg, MD, 20877, USA

SO Canadian Journal of Microbiology (1987), 33(2), 123-7  
CODEN: CJMIAZ; ISSN: 0008-4166

DT Journal

LA English

CC 7-2 (Enzymes)

AB A cell-free system catalyzing the synthesis of **.beta.-glucan** from UDP-glucose was prepd. from A. pullulans. The activity was stable in the presence of 1M sucrose and 1M MgSO4. The polymer produced was insol. in H2O or acetic acid (0.5M) and sol. in NaOH (0.5M). Several enzyme preps. contg. **.beta.-glucanase** activity degraded the polymer to various extents. Synthesis of the polymer was enhanced by the presence of cellobiose and bovine serum albumin, but not by NaF or ATP. A Lineweaver-Burke plot revealed biphasic kinetics. The enzyme prepn. was subject to partial activation by trypsin and chymotrypsin.

ST **glucan** synthetase beta **Aureobasidium**

IT Michaelis constant  
(of **glucan** synthetase, of **Aureobasidium pullulans**)

IT **Aureobasidium pullulans**  
(**.beta.-glucan** synthetase of)

IT 9041-22-9, **.beta.-Glucan**  
RL: FORM (Formation, nonpreparative)  
(formation of, by **Aureobasidium pullulans** cell-free system)

IT 9032-91-1P, **.beta.-Glucan** synthetase  
RL: PREP (Preparation)  
(of **Aureobasidium pullulans**, purifn. and characterization of)

IT 133-89-1, UDP glucose  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with **glucan** synthetase of **Aureobasidium pullulans**, kinetics of)

L68 ANSWER 22 OF 34 HCAPLUS COPYRIGHT 2002 ACS

AN 1986:607835 HCAPLUS

DN 105:207835

TI Cultures containing fructooligosaccharide and **.beta.-1,3-1,6-glucan** for use in beverage manufacture.

IN Shinohara, Satoshi

PA Shinohaya, Satoshi, Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF

DT Patent



LA Japanese  
 IC ICM C12P019-00  
 ICS C12P019-04  
 ICI C12P019-00, C12R001-645; C12P019-04, C12R001-645  
 CC 17-9 (Food and Feed Chemistry)  
 Section cross-reference(s): 16

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 61146192	A2	19860703	JP 1984-266963	19841217
	JP 05004063	B4	19930119		
AB	Aureobacidium Species FERM-P 4257, ATCC 20524 is cultured aerobically in a medium contg. sucrose 10.00, rice bran 0.01-0.30, vitamin C 0.10-0.20, and vitamin E 0.01-0.10 wt.% to yield cultures contg. fructooligosaccharide and <b>.beta.-1,3-1,6-glucan</b> . Thus, 50 mL seed culture was cultured aerobically at 25.degree. for 48 h. The culture supernatant contained <b>glucan</b> 0.45 and fructooligosaccharide 2.20% (glucose 29.4, fructose 16.4, 1-kestose 19.9, niistose (G-F3) 18.0, 1-fructofuranosylkestose 5.4, inulobiose 2.9, and sucrose 7.8%). It is used for prepn. of health beverages.				
ST	health beverage manuf <b>glucan</b> fructooligosaccharide				
IT	<b>Aureobasidium</b> (fructooligosaccharide and <b>glucan</b> from, for health beverage prepn.)				
IT	Fermentation (fructooligosaccharide and <b>glucan</b> , from Aureobacidium for health beverage manuf.)				
IT	Oligosaccharides RL: BIOL (Biological study) (fructose-contg., from Aureobacidium, for health beverage manuf.)				
IT	Beverages (health, fructooligosaccharide and <b>glucan</b> fermn. for manuf. of)				
IT	<b>53238-80-5</b> RL: BIOL (Biological study) (from Aureobacidium, for health beverage manuf.)				

L68 ANSWER 23 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1985:503455 HCAPLUS  
 DN 103:103455  
 TI Enzymic production of fructose-containing oligosaccharides  
 PA Shinohara, Satoru, Japan  
 SO Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese  
 IC ICM C12P019-18  
 ICI C12P019-18, C12R001-645  
 CC 16-2 (Fermentation and Bioindustrial Chemistry)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60041497	A2	19850305	JP 1983-148583	19830813
	JP 05004070	B4	19930119		
AB	Fructosyltransferase [9031-67-8]-producing Aureobacidium cells are immobilized by <b>.beta.-1,3-1,6-glucan</b> [53238-80-5], produced in the culture medium, and either Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> or other compds., and these immobilized bacteria are used to produce inulin-type fructose-contg. oligosaccharides, composed mainly of 1-kestose [470-69-9] and nystose [13133-07-8], from sucrose [57-50-1]. The oligosaccharides are sweeteners with no unpleasant aftertaste.				

ST oligosaccharide fructose Aureobacidium; sweetener kestose nystose  
 IT **Aureobasidium**  
 (immobilized, in fructose-contg. oligosaccharide prodn. from sucrose)  
 IT Sweetening agents  
 (kestose and nystose manuf. for)  
 IT Oligosaccharides  
 RL: FORM (Formation, nonpreparative)  
 (fructose-contg., formation of, from sucrose by immobilized  
 Aureobacidium, for use as sweeteners)  
 IT 470-69-9 13133-07-8  
 RL: FORM (Formation, nonpreparative)  
 (formation of, from sucrose by immobilized Aureobacidium, for use as  
 sweetener)  
 IT 57-50-1, biological studies  
 RL: BIOL (Biological study)  
 (kestose and nystose prodn. from, with immobilized Aureobacidium  
 fructosyltransferase)  
 IT 9031-67-8  
 RL: BIOL (Biological study)  
 (of immobilized Aureobacidium, in fructose-contg. oligosaccharide  
 prodn. from sucrose)  
 IT **53238-80-5**  
 RL: BIOL (Biological study)  
 (Aureobacidium immobilized with aluminum sulfate and, for  
 fructose-contg. oligosaccharide prodn. from sucrose)  
 IT 10043-01-3  
 RL: BIOL (Biological study)  
 (Aureobacidium immobilized with **glucan** and, for  
 fructose-contg. oligosaccharide prodn. from sucrose)

L68 ANSWER 24 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
 AN **1984:594061** HCAPLUS  
 DN **101:194061**  
 TI Self-supporting **glucan** films  
 IN Hijiya, Hiromi; Miyake, Toshio  
 PA Hayashibara Biochemical Laboratories, Inc., Japan  
 SO Fr. Demande, 14 pp.  
 CODEN: FRXXBL  
 DT Patent  
 LA French  
 IC B29D007-02; C08B037-00  
 CC 44-9 (Industrial Carbohydrates)  
 Section cross-reference(s): 17, 62, 63  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 2537496	A1	19840615	FR 1983-19729	19831209
	FR 2537496	B1	19881014		
	US 4562020	A	19851231	US 1983-556957	19831201
PRAI	JP 1982-217196		19821211		
	JP 1983-149993		19830817		
AB	Title films with high tensile and bending strength for water-sol., edible packaging materials for food, pharmaceuticals, and perfumes and manufd. by casting an aq. <b>glucan</b> [9012-72-0] soln. on a continuous moving corona-treated plastic band, drying, and sepg. from the band. Thus, water contg. corn syrup (dextrose equiv. 43) 10 (based on solids), K <sub>2</sub> HPO <sub>4</sub> 0.6, NaCl 0.1, MgSO <sub>4</sub> .7H <sub>2</sub> O 0.02, (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> 0.06, and yeast ext. 0.04% was heated 20 min at 120.degree., inoculated with <b>Aureobasidium pullulans</b> IFO 6353 at 25.degree., stirred and aerated one week, decolorized, partially purified by reverse osmosis, and concd. to give 70% pullulan [9057-02-7] as a 35% soln. This soln. was cast on a continuous, moving, corona-treated polyester band, dried at 90.degree., and sepd. from the band to give a 0.04-mm-thick transparent				

- film useful as water-sol., edible packaging material.
- ST **glucan** film self supporting; pullulan film self supporting;  
water sol packaging material; edible packaging material; food packaging  
material; pharmaceutical packaging material; perfume packaging material;  
packaging material polysaccharide; casting **glucan** film; corona  
treated polyester casting substrate; corn syrup **Aureobasidium**  
**pullulans** reaction
- IT Polycarbonates  
Polyesters, uses and miscellaneous  
RL: USES (Uses)  
(casting on continuous corona-treated moving bands of, in manuf. of  
**glucan** self-supporting films)
- IT Packaging materials  
(edible water-sol., **glucan** films for)
- IT Food  
Food  
Perfumes and Essences  
Pharmaceuticals  
(packaging materials for, **glucan** films for)
- IT Electric corona  
(plastic moving continuous bands treated by, in manuf. of  
**glucan** self-supporting film)
- IT Elsinoe fawcettii  
Elsinoe leucospila  
(polysaccharide reaction with, in manuf. of elsinane self-supporting  
films)
- IT **Aureobasidium pullulans**  
(polysaccharide reaction with, in manuf. of pullulan self-supporting  
films)
- IT Syrups  
(hydrolyzed starch, bacteria reaction with, in manuf. of **glucan**  
self-supporting films)
- IT 9003-07-0  
RL: USES (Uses)  
(casting on continuous corona-treated moving bands of, in manuf. of  
**glucan** self-supporting films)
- IT 66457-06-5  
RL: USES (Uses)  
(films, manuf. of self-supporting, by casting on continuous  
corona-treated moving plastic band)
- IT 9012-72-0 9057-02-7  
RL: USES (Uses)  
(films, manuf. of self-supporting, by casting on continuous moving  
corona-treated plastic bands)
- IT 104-55-2D, reaction products with .alpha.-cyclodextrin 2216-51-5D,  
reaction products with .beta.-cyclodextrin 7585-39-9D, reaction products  
with L-menthol 10016-20-3D, reaction products with cinnamaldelyde  
RL: USES (Uses)  
(pullulan self-supporting films contg., manuf. of)
- L68 ANSWER 25 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
AN 1983:505604 HCAPLUS  
DN 99:105604  
TI The structure of the carbohydrate moiety of an acidic polysaccharide  
produced by **Aureobasidium** sp. K-1  
AU Hamada, Nobutake; Tsujisaka, Yoshio  
CS Osaka Munic. Tech. Res. Inst., Osaka, 536, Japan  
SO Agric. Biol. Chem. (1983), 47(6), 1167-72  
CODEN: ABCHA6; ISSN: 0002-1369  
DT Journal  
LA English  
CC 33-5 (Carbohydrates)  
Section cross-reference(s): 10

- AB An acidic polysaccharide, isolated from the culture broth of **Aureobasidium** sp. K-1, is composed of D-glucose and sulfoacetic acid. The **glucan** moiety was hydrolyzed by **exo-.beta.-1,3-glucanase** to give glucose and gentiobiose (molar ratio, .apprx.1:3). The methylated **glucan** yielded on acid hydrolysis 2,3,4,6-tetra-O-methyl-, 2,4,6-tri-O-methyl- and 2,4-di-O-methyl-D-glucose (molar ratio, 2.6:1.0:2.7) together with small amts. of 2,3,6-tri-O-methyl-D-glucose. Smith degrading of the **glucan** moiety yielded glucose, glycerol and erythritol (molar ratio, 4:3.1:trace). From these results, it is suggested that the **glucan** consists of a backbone of **.beta.-1,3-linked** glucose residues containing single branches of glucose residues joined by **.beta.-1,6-linkages**, roughly three out of every four glucose residues in the backbone.
- ST structure acidic polysaccharide **Aureobasidium**
- IT **Aureobasidium**  
(acidic polysaccharide of, structure of)
- IT Molecular structure, natural product  
(of acidic polysaccharide of **Aureobasidium**)
- IT Polysaccharides, properties  
RL: PRP (Properties)  
(acidic, structure of, of **Aureobasidium**)
- IT 50-99-7P, preparation 123-43-3P  
RL: PREP (Preparation)  
(constituent, of acidic polysaccharide of **Aureobasidium**)
- L68 ANSWER 26 OF 34 HCAPLUS COPYRIGHT 2002 ACS
- AN 1980:600694 HCAPLUS
- DN 93:200694
- TI Acidic polysaccharide from **Aureobasidium pullulans**
- AU Leal-Serrano, G.; Ruperez, P.; Leal, J. A.
- CS Inst. Immunol. Biol. Microbiana, CSIC, Madrid, Spain
- SO Trans. Br. Mycol. Soc. (1980), 75(1), 57-62
- CODEN: BMSTA6; ISSN: 0007-1536
- DT Journal
- LA English
- CC 10-1 (Microbial Biochemistry)
- AB A. pullulans Forms an acidic extracellular polysaccharide when grown in liq., shake, or stationary cultures on a range of C sources and at different sugar concns. The polysaccharide contains glucose (90%), malic acid (9%), protein (3%), and phosphate (0.5%). The polysaccharide forms an insol. complex with cetyltrimethylammonium bromide from which it is recovered in >70% yield with the same compn. as the original product. Periodate oxidn. and Smith degrading indicate that the polysaccharide has 68% (1 .fwdarw. 3) and 32% (1 .fwdarw. 6) linkages. The IR spectrum shows an absorption band at 890 cm<sup>-1</sup> characteristic of **.beta.-configuration** and a band at 1750 characteristic of the carbonyl group of satd. esters.
- ST polysaccharide acid **Aureobasidium**; **glucan** formation  
**Aureobasidium**
- IT **Aureobasidium pullulans**  
(acid polysaccharides formation by, culture conditions in relation to)
- IT Sugars, biological studies  
RL: BAC (Biological activity or effector, except adverse); BIOL  
(Biological study)  
(polysaccharide formation by **Aureobasidium pullulans** response to)
- IT Polysaccharides, biological studies  
RL: FORM (Formation, nonpreparative)  
(acidic, formation of, by **Aureobasidium pullulans**, culture conditions in relation to)
- IT 9041-22-9

- RL: FORM (Formation, nonpreparative)  
(formation of, by **Aureobasidium pullulans**, culture conditions in relation to)
- IT 50-99-7, biological studies 69-79-4 3458-28-4  
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)  
(polysaccharide formation by **Aureobasidium pullulans** response to)
- L68 ANSWER 27 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
AN 1977:437278 HCAPLUS  
DN 87:37278  
TI Possibilities of using yeast polysaccharides as stimulants on the accumulation of antibody-forming cells  
AU Kashkina, M. A.; Elinov, N. P.  
CS Khim.-Farm. Inst., Leningrad, USSR  
SO Zh. Mikrobiol., Epidemiol. Immunobiol. (1977), (5), 86-9  
CODEN: ZMEIAV  
DT Journal  
LA Russian  
CC 15-13 (Immunochemistry)  
AB In CC57W mice stimulated with i.p. injection of yeast polysaccharides, with predominating .beta.-glycosidic bonds (mannans of *Rhodotorula rubra* or *Sporobolomyces* species, or **glucans** of **Aureobasidium pullulans**) 1-4 days before immunization with sheep erythrocytes, increased no. of antibody-forming cells in spleen was obsd; increased immune response was obsd. in mice BALB/c and CC57Bl. Dextran, mol. wt. 75,000-1 million, from *Leuconostoc mesenteroides* stimulated the response in BALB/c mice but not in CC57Bl & CBA mice.
- ST yeast polysaccharide mouse antibody formation; mannan mouse antibody formation; **glucan** mouse antibody formation; dextran mouse antibody formation
- IT Polysaccharides, biological studies  
RL: BIOL (Biological study)  
(of yeast, mouse antibody formation response to)
- IT **Aureobasidium pullulans**  
*Rhodotorula rubra*  
*Sporobolomyces*  
Yeast  
(polysaccharides of, immune response of mouse in relation to)
- IT Immunity  
(stimulation of, with yeast polysaccharides, in mouse)
- IT 9004-54-0, biological studies 9012-72-0 9036-88-8  
RL: BIOL (Biological study)  
(of yeast, mouse antibody formation response to)
- L68 ANSWER 28 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
AN 1975:443635 HCAPLUS  
DN 83:43635  
TI **Glucan** produced by an **Aureobasidium** (*Pullularia*) *pullulans* culture  
AU Elinov, N. P.; Marikhin, V. A.; Dranishnikov, A. N.; Myasnikova, L. P.; Maryukhta, Yu. B.  
CS Leningr. Khim.-Farm. Inst., Leningrad, USSR  
SO Dokl. Akad. Nauk SSSR (1975), 221(1), 213-16 [Microbiol]  
CODEN: DANKAS  
DT Journal  
LA Russian  
CC 33-3 (Carbohydrates)  
GI For diagram(s), see printed CA Issue.  
AB A **glucan** produced by an *A. pullulans* culture had structure I with a mol. wt. of .apprx.65000, according to x-ray crystal structure anal.

ST **Aureobasidium glucan** x ray  
 IT X-ray  
     (diffraction of, by **glucan** from **Aureobasidium pullulans**)  
 IT **Aureobasidium pullulans**  
     (structure of **glucan** from)  
 IT Polysaccharides, preparation  
     RL: PREP (Preparation)  
         (structure of **glucan** from **Aureobasidium pullulans**)  
 IT 9012-72-0  
     RL: PRP (Properties)  
         (structure of, from **Aureobasidium pullulans**)

L68 ANSWER 29 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1974:565979 HCAPLUS  
 DN 81:165979  
 TI Effect of some inorganic salts in the synthetic nutrient medium on the structure and properties of **glucan** formed by **Aureobasidium pullulans**  
 AU Elinov, N. P.; Neshataeva, E. V.; Dranishnikov, A. N.; Matveeva, A. K.  
 CS Leningrad Chem.-Pharm. Inst., Leningrad, USSR  
 SO Prikl. Biokhim. Mikrobiol. (1974), 10(4), 557-62  
     CODEN: PBMIK  
 DT Journal  
 LA Russian  
 CC 10-1 (Microbial Biochemistry)  
 AB **Glucan** was isolated following the cultivation of **A. pullulans** on media contg. MgSO<sub>4</sub>.7 H<sub>2</sub>O or other salts giving equiv. amts. of Mg and S (MgCl<sub>2</sub>.6 H<sub>2</sub>O, Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>.5 H<sub>2</sub>O, Na<sub>2</sub>SO<sub>4</sub>.10 H<sub>2</sub>O). **Glucan** was pptd. with EtOH from the cell-free water dild. culture liq. An examn. of the structure and the compn. of the polysaccharide preps. revealed a polymer contg. .beta.(Cl.fwdarw.C3), .alpha.(Cl.fwdarw.C4), and .alpha.(Cl.fwdarw.C6) glycoside bonds.  
 ST **glucan Aureobasidium** salt medium; polysaccharide structure nutrient medium  
 IT **Aureobasidium pullulans**  
     (**glucan** of, salts in nutrient medium effect on)  
 IT 9012-72-0  
     RL: BIOL (Biological study)  
         (of **Aureobasidium pullulans**, salts in nutrient medium effect on)

L68 ANSWER 30 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1974:462106 HCAPLUS  
 DN 81:62106  
 TI **Glucan**  
 IN Elinov, N. P.; Matveeva, A. K.; Neshataeva, E. V.; Dranishnikov, A. N.; Smorodintsev, A. A.; Aksenov, O. A.  
 PA Leningrad Chemical-Pharmaceutical Institute; All-Union Scientific-Research Institute of Influenza  
 SO U.S.S.R.  
     From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1973, 50(42), 46-7.  
     CODEN: URXXAF  
 DT Patent  
 LA Russian  
 IC C12D  
 CC 16-2 (Fermentations)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	SU 402539	T	19731019	SU 1971-1703906	19711005

- AB **Glucan** was obtained by culturing **Aureobasidium pullulans** on a medium contg. MgSO<sub>4</sub>. For obtaining **glucan** with pronounced antiviral and interferonogenic action, strain 133 LKhFI was cultured on a medium contg. 0.1-0.3% MgSO<sub>4</sub>.
- ST **glucan** magnesium sulfate **Aureobasidium**
- IT **Aureobasidium pullulans**  
(**glucan** manuf. by, on magnesium sulfate-contg. medium)
- IT Fermentation  
(**glucan**, by **Aureobasidium pullulans**)
- IT 7487-88-9, biological studies  
RL: BIOL (Biological study)  
(in **glucan** fermn. by **Aureobasidium pullulans**)
- IT 9012-72-0P  
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)  
(manuf. of, by **Aureobasidium pullulans**)
- L68 ANSWER 31 OF 34 HCAPLUS COPYRIGHT 2002 ACS
- AN 1973:94619 HCAPLUS
- DN 78:94619
- TI Structure and chemical composition of yeast chlamydospores of **Aureobasidium pullulans**
- AU Brown, Robert G.; Hanic, Louis A.; Hsiao, May
- CS Dep. Biol., Dalhousie Univ., Halifax, Nova Scotia, Can.
- SO Can. J. Microbiol. (1973), 19(2), 163-8  
CODEN: CJMIAZ
- DT Journal
- LA English
- CC 10-1 (Microbial Biochemistry)
- AB Cellular form in **A. pullulans** can be partially controlled by N nutrition. Ammonium N supports a mixt. of filamentous and yeastlike growth, whereas only a few filaments develop on nitrate N. On nitrate 97% of the cell material consists of a mixt. of yeastlike cells and chlamydospores. Chlamydospores are produced on both N sources. However, with ammonium N chlamydospores occur in an intercalary position, whereas nitrate N supports development of chlamydospores as sep. structures contg. one, two, or occasionally three cells. This mode of prodn. allows sepn. of yeast chlamydospores from other cell types and subsequent isolation of their cell walls. Yeast chlamydospores and filaments have an electron dense, melanin-rich, granular outer cell-wall layer which yeastlike cells lack. This granular material is also found in cross walls of filaments and chlamydospores. Glucose is the main component of chlamydospore walls and accounts for 36% of the dry wt. Yeastlike cell walls contain only 13% glucose, but more mannose, galactose, and bound lipid. Most of the **glucan** portion of chlamydospore walls is insol. in dil. alkali; methylation anal. indicates that this material contains linear chains of ( 1 .fwdarw. 3) and (1 .fwdarw. 6) linked glucose. About one residue in five forms a branch point having both (1 .fwdarw. 3) and (1 .fwdarw. 6) linkages.
- ST yeast chlamydospore **Aureobasidium** compn
- IT **Aureobasidium pullulans**  
(compn. and structure of chlamydospores of)
- IT Carbohydrates, biological studies  
RL: BIOL (Biological study)  
(of spores, of **Aureobasidium pullulans**)
- IT 9012-72-0  
RL: BIOL (Biological study)  
(of spores, of **Aureobasidium pullulans**)
- L68 ANSWER 32 OF 34 HCAPLUS COPYRIGHT 2002 ACS
- AN 1968:46390 HCAPLUS

DN 68:46390  
 TI Polysaccharides from cell walls of *Aureobasidium* (*Pullularia*) *pullulans*. I. **Glucans**  
 AU Brown, Robert George; Lindberg, Bengt  
 CS Trakemiska Avdelningen, Svenska Traforskningsinst., Stockholm, Swed.  
 SO Acta Chem. Scand. (1967), 21(9), 2379-82  
 CODEN: ACSAA4  
 DT Journal  
 LA English  
 CC 2 (General Biochemistry)  
 AB The cell wall of *P. pullulans* contains three types of **.beta.-glucan**. One, extd. with dil. alkali, has a linear backbone of essentially (1 .fwdarw. 3)-linked glucose residues, part of which are substituted by single glucose residues in the 6-position. The cell wall material insol. in dil. alkali contains a highly cryst., essentially linear (1 .fwdarw. 3)-linked **glucan** and an amorphous **glucan** contg. (1 .fwdarw. 3) and (1 .fwdarw. 6)-linked glucose residues.  
 ST POLYSACCHARIDES FUNGI; CELL WALLS POLYSACCHARIDES; PULLULARIA POLYSACCHARIDES; **GLUCANS** FUNGAL CELL WALLS; FUNGI POLYSACCHARIDES  
 IT Polysaccharides, properties  
 RL: PRP (Properties)  
 (of *Pullularia pullulans* cell wall, structure of)  
 IT **Pullularia**  
 (pullulans, **.beta.-glucans** of cell wall of, structure of)  
 IT **Glucans**  
 RL: BIOL (Biological study)  
 (.beta.-, of *Pullularia pullulan* cell wall, structure of)  
 L68 ANSWER 33 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1963:483913 HCAPLUS  
 DN 59:83913  
 OREF 59:15625f-h  
 TI Polysaccharides elaborated by *Pullularia pullulans*.  
 III. Polysaccharides synthesized from xylose solutions  
 AU Bouveng, Hans O.; Kiessling, Hans; Lindberg, Bengt; McKay, James  
 CS Svenska Traforskningsinst., Stockholm  
 SO Acta Chem. Scand. (1963), 17(5), 1351-6  
 DT Journal  
 LA English  
 CC 62 (Microbial Biochemistry)  
 AB cf. CA 59, 8847g. *P. pullulans* was grown on a substrate contg. 50 g. xylose and the polysaccharides isolated as previously described to give an **.alpha.-glucan** (I), a **.beta.-glucan** (II), and an acidic heteropolysaccharide (III). I, [.alpha.]22D + 180-90.degree. appeared from HIO4 oxidn. to contain (1 .fwdarw. 4) and (1 .fwdarw. 6) links in the ratio of 2.2:1. II, [.alpha.]22D - 3.degree. (c 1.0, M NaOH), gave glucose (IV) on complete hydrolysis; enzymic hydrolysis with a **.beta.-(1 .fwdarw. 3)-glucose** gave IV and gentiobiose; methylation followed by hydrolysis gave 40% 2,3,4,6-tetra-, 20% 2,4,6-tri-, and 41% 2,4-di-O-methyl-D-glucose; and partial hydrolysis gave laminaribiose, laminaritriose, and higher oligosaccharides. These facts indicate II to have a backbone of (1 .fwdarw. 3)-**.beta.-linked** glucose residues, 2 out of 3 of which are substituted at position 6 with a **.beta.-D-glucoside**. III was briefly examd. and was found to contain galactose, IV, and mannose in 4:1:5 ratio plus about 10% uronic acid.  
 IT Polysaccharides  
 (from *Pullularia pullulans*, on xylose substrate)  
 IT **Glucans**



**Glucans**(from *Pullularia pullulans*, on xylose substrates)

- IT 554-91-6, Gentiobiose 3256-04-0, Laminaritriose 34980-39-7,  
Laminaribiose  
(as hydrolysis product of polysaccharide from *Pullularia pullulans* on xylose substrate)
- IT 3615-47-2, D-Glucose, 2,3,4,6-tetra-O-methyl- 4578-22-7, D-Glucose,  
2,4,6-tri-O-methyl- 19887-43-5, D-Glucose, 2,4-di-O-methyl-  
(prepn. of)
- L68 ANSWER 34 OF 34 HCAPLUS COPYRIGHT 2002 ACS  
AN 1962:449551 HCAPLUS  
DN 57:49551  
OREF 57:9932g-i,9933a  
TI Polysaccharides elaborated by *Pullularia pullulans*. I.  
Neutral **glucan** synthesized from sucrose solutions  
AU Bouveng, Hans O.; Kiessling, Hans; Lindberg, Bengt; McKay, James  
CS Svenska Traforskningsinst., Stockholm  
SO Acta Chem. Scand. (1962), 16, 615-22  
DT Journal  
LA English  
CC 37 (Carbohydrates)  
AB The crude polysaccharide isolated from cultures of the fungus  
*Pullularia pullulans* in glucose (I) solns. gave an  
acidic polysaccharide (contg. largely I) and a neutral, H<sub>2</sub>O-sol.  
**glucan**, [.alpha.]<sub>20D</sub> 190.degree. having the structure of an  
essentially linear mol. of more than 250 .alpha.-D-glucopyranose 1  
,6- and 1,4-residues in the ratio 1:2 (1-2% 1,  
3-linkages may be present since small amts. of unoxidized I were  
found) and giving on redn. and hydrolysis 0.63 mole erythritol (II), m.  
118-19.degree. (tetra-acetate, m. 83-4.degree.), 0.35 mole glycerol (III)  
(tri-O-benzoate, m. 70-1.degree.), and 0.02 mole I per anhydroglucose  
residue in the original polysaccharide. Methylation and subsequent  
hydrolysis gave 33% 2,3,4-tri- ([.alpha.]<sub>24D</sub> 82.degree. (c 1.95, H<sub>2</sub>O)  
(p-phenylazobenzoate m. 164-5.degree.), 66% 2,3,6-tri- (m. 112-16.degree.,  
[.alpha.]<sub>24D</sub> 92.degree. 68.degree. (c 0.84, H<sub>2</sub>O), phenylhydrazide of the  
acid, m. 144-5.degree.), and 0.4% 2,3,4,6-tetra-O-methylglucopyranose; the  
partial acetolizate gave (on deacetylation) 26% I, 23% maltose (IV) (.  
**beta**.-octaacetate, m. 158.59.5.degree., [.alpha.]<sub>22D</sub> 62.degree. (c  
1.30, CHCl<sub>3</sub>)), 3% isomaltose, 4% iso-maltotriose, and 8% maltotriose. The  
acidic **glucan** isolated from the polysaccharide mixt. contained  
66.1% reducing sugars and 9.9% uronic anhydride; redn. and hydrolysis of  
the oxidized (IO<sub>4</sub>-) polysaccharide gave I and III, but no II. A neutral  
**glucan**, [.alpha.]<sub>20D</sub> 198.degree. (c 0.8, H<sub>2</sub>O), giving only I on  
hydrolysis and 32% 1,6- and 68% 1,4-linkages after  
IO<sub>4</sub>- oxidn., gave II, III, IV, and V, and a little I (and possibly  
nigerose) from cultures grown on IV.
- IT **Glucans**  
Polysaccharides  
(from *Pullularia pullulans*)

=&gt; fil biosis

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CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT  
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 30 October 2002 (20021030/ED)

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L83 ANSWER 1 OF 4 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 AN 1999:110499 BIOSIS  
 DN PREV199900110499  
 TI Isolation of an **Aureobasidium pullulans** polysaccharide  
 that promotes adhesion of blastospores to water-borne paints.  
 AU Bardage, Stig L. (1); Bjurman, Jonny  
 CS (1) Swed. Univ. Agric. Sci., Dep. For. Products, Box 7008, S-750 07  
 Uppsala Sweden  
 SO Canadian Journal of Microbiology, (Oct., 1998) Vol. 44, No. 10, pp.  
 954-958.  
 ISSN: 0008-4166.  
 DT Article  
 LA English  
 SL English; French  
 AB A polysaccharide composed of maltotriose units was isolated from a liquid  
 culture of **Aureobasidium pullulans** (De  
 Bary) Arnaud blastospores incubated for 4 h, by precipitation with  
 tetrahydrofuran on solvent-resistant membranes. The concentration of  
 polysaccharide obtained from the liquid cultures after incubation of  
 approximately 106 spores/mL was estimated to be 2 mug/mL of culture  
 filtrate. This polysaccharide seems to be pullulan, as judged by  
 degradation with pullulanase. Newly harvested blastospores resuspended in  
 water did not adhere to the surface of painted wood. However, suspensions  
 of purified culture extract enhanced the adhesion of newly harvested  
 blastospores to the surface of painted wood. It is therefore concluded  
 that pullulan is released by blastospores and contributes to the adhesion  
 of blastospores to surfaces.  
 CC Plant Physiology, Biochemistry and Biophysics - Chemical Constituents  
 \*51522  
 Cytology and Cytochemistry - Plant \*02504  
 Biochemical Studies - General \*10060  
 Enzymes - General and Comparative Studies; Coenzymes \*10802  
 Botany, General and Systematic - Fungi \*50506  
 Plant Physiology, Biochemistry and Biophysics - Apparatus and Methods  
 \*51524  
 BC Fungi Imperfecti or Deuteromycetes 15500  
 IT Major Concepts  
 Biochemistry and Molecular Biophysics; Pollution Assessment Control and  
 Management  
 IT Parts, Structures, & Systems of Organisms  
 arnaud blastospores: adhesion; membrane: solvent resistant  
 IT Chemicals & Biochemicals  
 pullulanase; tetrahydrofuran; **Aureobasidium-pullulans**  
 pullulan: maltotriose unit, polysaccharide  
 IT Miscellaneous Descriptors  
 painted wood  
 ORGN Super Taxa  
 Fungi Imperfecti or Deuteromycetes: Fungi, Plantae  
 ORGN Organism Name  
**Aureobasidium pullulans** (Fungi Imperfecti or  
 Deuteromycetes)  
 ORGN Organism Superterms  
 Fungi; Microorganisms; Nonvascular Plants; Plants  
 RN 9057-02-7 (PULLULAN)  
 1109-28-0 (MALTOTRIOSE)  
 109-99-9 (TETRAHYDROFURAN)  
 9075-68-7 (PULLULANASE)  
 L83 ANSWER 2 OF 4 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 AN 1997:449411 BIOSIS  
 DN PREV199799748614

TI A new variety of *Aureobasidium pullulans* characterized  
 by exopolysaccharide structure, nutritional physiology and molecular  
 features.  
 AU Yurlova, N. A. (1); De-Hoog, G. S.  
 CS (1) Dep. Microbiol., Chemical-Pharmaceutical Inst., 14 Prof. Popov Str.,  
 197376 St. Petersburg Russia  
 SO Antonie van Leeuwenhoek, (1997) Vol. 72, No. 2, pp. 141-147.  
 ISSN: 0003-6072.  
 DT Article  
 LA English  
 AB The black yeast *Aureobasidium pullulans* (de Bary) Arnaud is known to  
 synthesize the exopolysaccharide pullulan, a poly-alpha-1,  
 6-maltotriose. Nine strains were found to produce additional  
 aubasidan-like EPS, i.e. glucans with alpha-1,4-D-,beta  
 -1,6-D- and beta-1,3  
 -D-glycosidic bonds. These strains had previously been found to deviate in  
 genotypic characters. Additional physiological differences were found: the  
 optimal nitrogen source for exopolysaccharide production in liquid medium  
 was NaNO-3 for aubasidan-producing strains, and (NH-4)-2SO-4 for the  
 remaining strains. A new variety, *A. pullulans* var. *aubasidani* Yurlova, is  
 described for the strains producing aubasidan-like components. The new  
 variety can be distinguished from *A. pullulans* var. *pullulans* by the  
 absence of assimilation of methyl-alpha-D-glucoside and lactose.  
 CC Botany, General and Systematic - Fungi \*50506  
 Plant Physiology, Biochemistry and Biophysics - Metabolism \*51519  
 Plant Physiology, Biochemistry and Biophysics - Chemical Constituents  
 \*51522  
 BC Fungi Imperfecti or Deuteromycetes \*15500  
 IT Major Concepts  
 Biochemistry and Molecular Biophysics; Metabolism; Systematics and  
 Taxonomy  
 IT Chemicals & Biochemicals  
 PULLULAN; GLUCANS; LACTOSE; METHYL-ALPHA-D-GLUCOSIDE  
 IT Miscellaneous Descriptors  
 AUBASIDAN-LIKE COMPONENTS; EXOPOLYSACCHARIDE; EXOPOLYSACCHARIDE  
 STRUCTURE; GLUCANS; LACTOSE ASSIMILATION; METHYL-ALPHA-D-GLUCOSIDE  
 ASSIMILATION; NUTRITIONAL PHYSIOLOGY; PULLULAN; SYSTEMATICS  
 ORGN Super Taxa  
 Fungi Imperfecti or Deuteromycetes: Fungi, Plantae  
 ORGN Organism Name  
*Aureobasidium pullulans* var. *aubasidani* (Fungi  
 Imperfecti or Deuteromycetes): new variety; *Aureobasidium*  
*pullulans* var. *pullulans* (Fungi Imperfecti or Deuteromycetes)  
 ORGN Organism Superterms  
 fungi; microorganisms; nonvascular plants; plants  
 RN 9057-02-7 (PULLULAN)  
 9012-72-0 (GLUCANS)  
 63-42-3 (LACTOSE)  
 97-30-3 (METHYL-ALPHA-D-GLUCOSIDE)  
 L83 ANSWER 3 OF 4 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 AN 1990:374861 BIOSIS  
 DN BA90:61542  
 TI ISOLATION AND IDENTIFICATION OF THE BLACK YEAST  
 PRODUCING FRUCTOSYLTRANSFERASE.  
 AU CHO W-T; LIM J-Y; LEE S-S  
 CS DEP. MICROBIOL., COLL. NATURAL SCI., CHUNGBUK NATL. UNIV., CHEONGJU  
 360-763, KOREA.  
 SO KOREAN J MYCOL, (1990) 18 (1), 20-25.  
 CODEN: HKCHDD. ISSN: 0253-651X.  
 FS BA; OLD  
 LA English

- AB For the purpose of obtaining microorganisms producing high fructosyl transferase, the screening test was carried out. Among more than three hundred isolates, an isolate (C23-isolate) was selected for high fructosyl transferase producer from the dirt at the coffee vending machine. The morphological and cultural characteristics of the isolate C23 on various culture media were studied and identified as **Aureobasidium pullulans** var. **melanigenum**.
- CC Biochemical Studies - Proteins, Peptides and Amino Acids 10064  
Enzymes - Physiological Studies \*10808  
Metabolism - Proteins, Peptides and Amino Acids \*13012  
Food and Industrial Microbiology - Biosynthesis, Bioassay and Fermentation \*39007  
Plant Physiology, Biochemistry and Biophysics - Enzymes \*51518  
Plant Physiology, Biochemistry and Biophysics - Metabolism \*51519
- BC Fungi Imperfecti or Deuteromycetes 15500
- IT Miscellaneous Descriptors  
**AUREOBASIDIUM-PULLULANS-VAR-MELANIGENUM COFFEE RESIDUE**
- RN **9031-67-8 (FRUCTOSYLTRANSFERASE)**
- L83 ANSWER 4 OF 4 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
AN **1985:355627 BIOSIS**  
DN **BA80:25619**  
TI POLYSACCHARIDE PRODUCED BY **AUREOBASIDIUM-SP BLACK YEAST**.
- AU FUJII N; SHINOHARA S; UENO H; IMADA K  
SO BULL FAC AGRIC MIYAZAKI UNIV, (1984 (RECD 1985)) 31 (2), 253-262.  
CODEN: MDNKAC. ISSN: 0544-6066.
- FS BA; OLD  
LA Japanese
- AB A strain of fungi imperfecti was isolated from raw sugar and identified **Aureobasidium** sp. FERM-P4257 (deposited at Biseibutsu Kogyo Gijitsu Kenkyusho, Deposit No. 4257). The **Aureobasidium** sp. produced high MW polysaccharide in liquid culture. The polysaccharide structure was changeable according to the culture medium composition. The determination of the bonding mode of sugar was carried out by methylation in accordance with the Hakomori's method. The methylated sugar thus obtained was made into alditol acetate and analyzed by GLC, a mass spectrometer, an IR absorption spectrum and <sup>13</sup>C-NMR spectrum. The total phosphoric acid of the polysaccharide was measured by a fluorescent X-ray analysis. The bonding mode of the constituent glucose as judged from the results of the analysis was of the following structure. Structure of polysaccharide produced in the A-medium was: the main constitutive sugar of the polysaccharide was glucose, the bonding mode thereof being .alpha.-linkage, and the chain being .alpha.-1,4,1,6 and .alpha.-1,3 linkage (pullulan). Structure of polysaccharide produced in the B-medium (vitamin C contained) was: the polysaccharide was glucose as the main constitutive sugar, the bonding mode thereof being .beta.-linkage, the principal chain is constituted with .beta.-1,3 linkage, and the non-reducing end-groups are branching with .beta.-1,6 linkage and further containing phosphoric acid.
- CC Radiation - Radiation and Isotope Techniques 06504  
Biochemical Methods - Carbohydrates 10058  
Biochemical Studies - Carbohydrates \*10068  
Biophysics - General Biophysical Techniques 10504  
Biophysics - Molecular Properties and Macromolecules \*10506  
Metabolism - Carbohydrates \*13004  
Microbiological Apparatus, Methods and Media \*32000  
Plant Physiology, Biochemistry and Biophysics - Metabolism \*51519  
Plant Physiology, Biochemistry and Biophysics - Chemical Constituents \*51522
- BC Fungi Imperfecti or Deuteromycetes 15500
- IT Miscellaneous Descriptors

GLUCOSE BONDING MODE PHOSPHORIC-ACID METHYLATION GAS LIQUID  
CHROMATOGRAPHY MASS SPECTROMETRY IR ABSORPTION SPECTROSCOPY NMR  
FLUORESCENT X-RAY ANALYSIS  
RN 50-99-7 (GLUCOSE)  
7664-38-2 (PHOSPHORIC-ACID)

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(FILE 'HOME' ENTERED AT 10:07:42 ON 03 NOV 2002)  
SET COST OFF

FILE 'HCAPLUS' ENTERED AT 10:08:04 ON 03 NOV 2002  
L1 23 S BETA 1 3 1 6 GLUCAN  
L2 32 S BETA 1 3 BETA 1 6 GLUCAN  
L3 54 S L1,L2  
L4 436 S BETA (L) 1 3 (L) 1 6 (L) GLUCAN  
L5 436 S L3,L4  
E IKEWAKI N/AU  
L6 21 S E3-E5  
E FUJII N/AU  
L7 177 S E3,E33,E34,E48  
E ONAKA T/AU  
L8 172 S E3,E8,E10  
E NOBUNAO I/AU  
E NOBORU F/AU  
E TAKASHI O/AU  
E ONAKA Y/PA,CS  
E ONAKA/PA,CS  
L9 7 S E3,E4  
E YASUSHI/PA,CS  
L10 99 S E3-E6  
L11 1 S L5 AND L6-L10

FILE 'REGISTRY' ENTERED AT 10:12:43 ON 03 NOV 2002  
L12 1 S 9041-22-9

FILE 'HCAPLUS' ENTERED AT 10:13:47 ON 03 NOV 2002  
L13 1582 S L12  
L14 4218 S BETA GLUCAN OR BETA D GLUCAN OR BETA GLUCOSYLGLUCAN OR EPIGLU  
L15 3 S L13,L14 AND L6-L10  
L16 3 S L11,L15  
L17 188 S L5 AND L13,L14  
L18 248 S L5 NOT L17

FILE 'REGISTRY' ENTERED AT 10:22:47 ON 03 NOV 2002  
L19 1 S 53238-80-5  
L20 1 S 9051-97-2  
L21 1 S 37361-00-5  
L22 1 S 9012-72-0

FILE 'HCAPLUS' ENTERED AT 10:24:29 ON 03 NOV 2002  
SET SMARTSELECT ON  
L23 SEL L5 1- RN : 1059 TERMS  
SET SMARTSELECT OFF

FILE 'REGISTRY' ENTERED AT 10:24:38 ON 03 NOV 2002  
L24 1056 S L23  
L25 1051 S L24 NOT L12,L19-L22  
L26 278 S L25 AND UNSPECIFIED  
L27 217 S L26 NOT SQL/FA  
L28 199 S L27 AND 1/NC  
L29 49 S L28 AND GLUCAN

L30 18 S L29 AND FWDARW  
 L31 15 S L30 AND (3 OR 6)  
 L32 11 S L31 NOT ENDO  
 L33 8 S L32 NOT 4  
 L34 5 S L33 NOT (LAMINARAN OR EXO OR URIDINE)  
 L35 3 S L34 AND (3 AND 6)  
 L36 2 S L34 NOT L35  
 L37 1 S L36 AND 3  
 L38 1 S L36 NOT L37  
 L39 31 S L29 NOT L30-L38  
 L40 3 S L39 AND ALPHA D GLUCAN  
 L41 1 S L40 NOT AMYLASE

FILE 'HCAPLUS' ENTERED AT 10:30:55 ON 03 NOV 2002  
 L42 197 S L35 OR L19  
 L43 93 S L20,L37 AND L21,L38  
 L44 628 S L42,L43,L5,L17  
 L45 2085 S L22,L41  
 L46 1 S FERM () (P18099 OR P()(18099 OR 18 099))  
 E AUREOBASID/CT  
 E E4+ALL  
 L47 1123 S E4+NT  
 L48 1541 S E4-E14/BI  
 E AUREOBASID  
 L49 1333 S E8-E10  
 L50 5 S E18,E20,E21  
 L51 1 S L5,L13-L18,L42-L45 AND L46  
 L52 53 S L5,L13-L18,L42-L45 AND L47-L50  
 L53 3 S L16 AND L51,L52  
 L54 50 S L52 NOT L51,L53  
 L55 22 S L54 AND (1 3 OR 1 6)  
 L56 16 S L54 AND 1 3 AND 1 6  
 L57 19 S L51,L53,L56  
 L58 34 S L52,L54,L55 NOT L57  
 L59 14 S L58 AND 1(1W)3  
 L60 11 S L58 AND 1(1W)6  
 L61 6 S L59 AND L60  
 L62 25 S L57,L61  
 L63 28 S L58 NOT L62  
 L64 27 S L63 NOT 3/SC,SX  
 SEL DN AN 3 10 11 14 15 19 22 23 24  
 L65 9 S E1-E27  
 L66 34 S L62,L65 AND L1-L11,L13-L18,L42-L65  
 L67 33 S L66 AND ?GLUCAN?  
 L68 34 S L66,L67  
 SEL HIT RN

FILE 'REGISTRY' ENTERED AT 10:45:05 ON 03 NOV 2002  
 L69 7 S E28-E34

FILE 'REGISTRY' ENTERED AT 10:45:42 ON 03 NOV 2002

FILE 'HCAPLUS' ENTERED AT 10:45:49 ON 03 NOV 2002

FILE 'BIOSIS' ENTERED AT 10:46:19 ON 03 NOV 2002  
 L70 1597394 S L5,L13,L14,L24,L42,L43,L44,L45  
 L71 0 S L46  
 L72 2675 S BETA (L) 1(1W)3 (L) GLUCAN  
 L73 632 S BETA (L) 1(1W)6 (L) GLUCAN  
 L74 1597696 S L70,L72,L73  
 L75 1408 S L48,L49  
 E AUREOBASID/BC  
 L76 433 S L74 AND L75

L77 42 S L76 AND GLUCAN  
 L78 6 S L77 AND (1 3 OR 1 (1W) 3) AND (1 6 OR 1 (1W) 6)  
 L79 17 S BLACK YEAST AND L74  
 L80 40 S DE BARY AND L74  
 L81 56 S L79,L80  
 L82 12 S L76 AND L81  
     SEL DN AN 5 6 10 11  
 L83 4 S L82 AND E1-E8  
 L84 9 S L78,L83  
 L85 80 S L77,L81 NOT L82-L84

FILE 'BIOSIS' ENTERED AT 10:56:13 ON 03 NOV 2002

Jan DELAVAL

Please!

Access DB# 77205

# SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Josephine YOUNG Examiner #: 79813 Date: 10/31/2002  
Art Unit: 1623 Phone Number 301 605-1201 Serial Number: 01986,535  
Mail Box and Bldg/Room Location: CM1 9D09 Results Format Preferred (circle): PAPER DISK E-MAIL  
CM1 8B19 (After 11/5/02: 8D04)

If more than one search is submitted, please prioritize searches in order of need.  
\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Beta-1,3-1,6-glucan (Aureobasidium Medium)  
Inventors (please provide full names): IKAWAKI, Nobunao; FUJII, Noboru;  
ONAKA, Takashi

Earliest Priority Filing Date: 11/09/2000

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Attached: "Current Claims; 2) B.B Sheet; 3) Assignment Info

Inventive Concept: ① producing/obtaining  $\beta$ -glucan from  
Aureobasidium (fungus) aka black yeast(?)  
(known in mushrooms, e.g. Agaricus, Lentinus; yeasts  
other microorganisms)



Thanks!

Jan Delaval  
Reference Librarian  
Biotechnology & Chemical Library  
CM1 1E07 - 703-308-4498  
jan.delaval@uspto.gov

***** STAFF USE ONLY *****		
	Type of Search	Vendors and cost where applicable
Searcher: <u>Jan</u>	NA Sequence (#) _____	STN <input checked="" type="checkbox"/>
Searcher Phone #: <u>4478</u>	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: <u>11/3/02</u>	Bibliographic <input checked="" type="checkbox"/>	Dr.Link _____
Date Completed: <u>11/5/02</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>1:52</u>	Other _____	Other (specify) _____